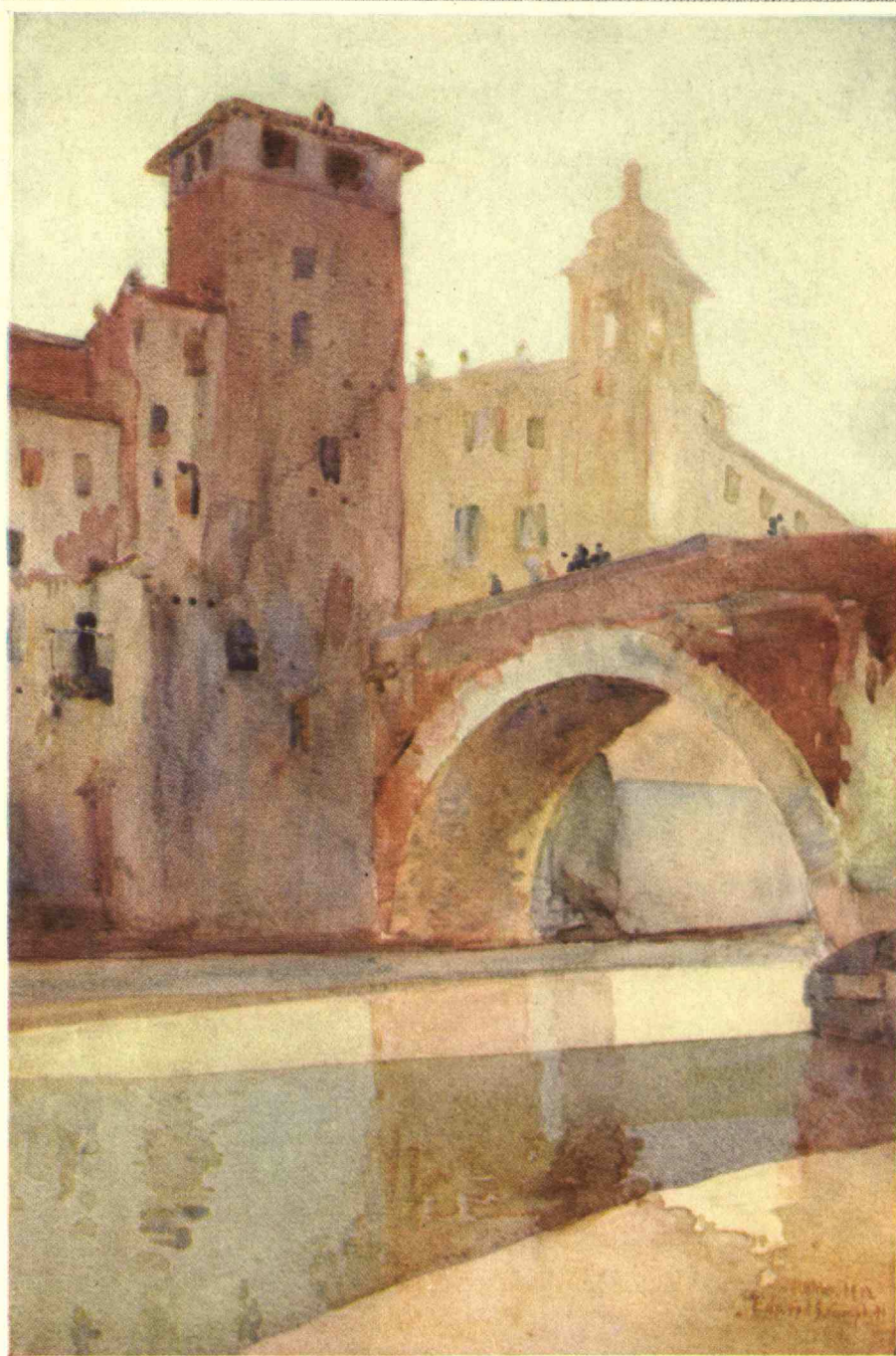


THE TECHNOLOGY REVIEW



FEBRUARY

1930

technology review

Published by MIT

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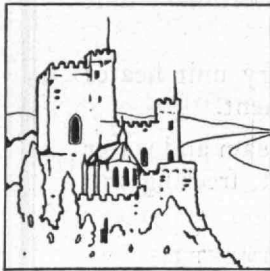
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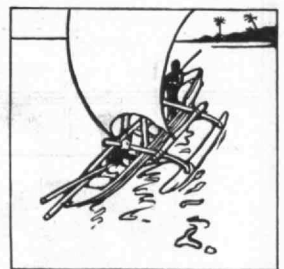
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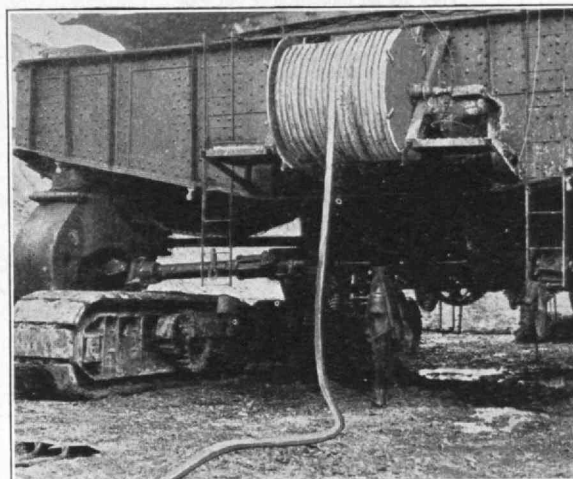
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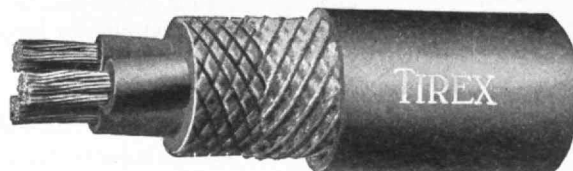
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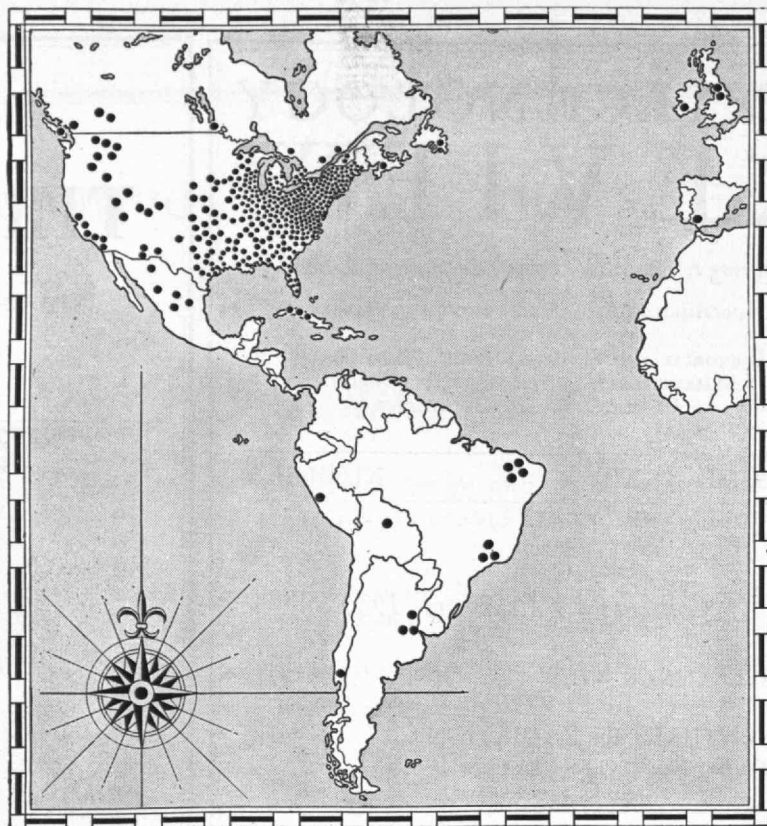
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THE TABULAR VIEW

NO ARTICLE ever published by The Review received the comment that DONALD C. STOCKBARGER's ('19) "Check the Sun Bath" received in November, 1928. It pointed out the possible abuses resulting from the indiscriminate use of ultraviolet or sun lamps and it called attention to the many lamps that give off little or no radiation. He returns again as a contributor in this issue, expounding the methods and work of the Radiation Laboratory he conducts at the Institute. It was the first one established in this country and it has contributed notably to our knowledge of the use and control of invisible rays. The work of the laboratory ranges from detecting fraudulent checks to measuring rays that cure rickets.

ONE of the great Roman engineers was SEXTUS JULIUS FRONTIUS, Water Commissioner of the City of Rome, A.D. 97. Fortunately he left a treatise on his work as water commissioner that is still preserved in Italy and has been made available to American readers by CLEMENS HERSCHEL in his book "Frontius and the Water Supply of the City of Rome" (Longmans, Green and Company). Mr. Herschel includes in his book a translation of the treatise of Frontius which makes clear that the problems which confronted this ancient water commissioner were strikingly similar to the problems confronting metropolitan commissioners today. It makes excellent parallel reading for the article on page 189 by FREDERIC H. FAY, '93, Chairman of the Boston City Planning Board and President of the American Institute of Consulting Engineers. Mr. Fay's comprehensive description of the engineering development of Metropolitan Boston, the construction of its aqueducts, bridges, reservoirs, parkways, and sewer disposal systems prompts the asking again of a question which Frontius asked in his day — "Will anybody compare the idle Pyramids, or those other useless though much renowned works of the Greeks, with these aqueducts, bridges, reservoirs, parkways, all indispensable structures?"

MR. FAY'S article is one of a series that The Review is presenting on American cities and their problems. The necessity of giving the engineer more opportunity to improve our cities is emphasized by the report of CHARLES H. CHENEY, Chairman of the Committee on City and Regional Planning of the American Institute of Architects, commented upon on page 200. Mr. Fay has been a tireless, far-seeing worker in civic engineering. The City Engineer's Office, the Public Works Department, the Massachusetts Highway Association, the Boston Chamber of Commerce, and the City of Syracuse are but a few of the organizations that have utilized his great abilities. In 1901 he wrote "The Population and Finances of Boston" and since then has contributed many articles to magazines and papers to technical societies. His present article is derived from a much longer paper presented at a meeting of the American Society of Civil Engineers. The Review is very grateful to the Society for permitting its publication. (Continued on page 182)

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THE TABULAR VIEW

(Concluded from page 181)

THE PUBLIC MIND is much confused by the many transient movements in art and architecture. A. W. K. BILLINGS, JR., '28, in his article on page 194 presents pertinent comment on what he chooses to call "fly-by-night, modernistic architecture." There undoubtedly are many who will disagree with what he says, but there are few who can deny that the prevailing æsthetic conception of beauty is more appealing than the efficiency ideal espoused by many European architects.

SEVERAL MAGAZINES, among them *The Review*, were misled by reports that the Irving Trust Company Building at 1 Wall Street was contesting with the Chrysler Building for height. Its designer, RALPH T. WALKER, '11, disclaims this report — first published in *The New Yorker* — and states that his building is, in terms of New York, a very small building of fifty stories. In the same issue Mr. Walker's partner, STEPHEN F. VOORHEES, was confused with GARDNER T. VOORHEES, '90. Each gentleman undoubtedly was complimented — at least *The Review* hopes so.

PAUL F. JOHNSON, '98, from his home, 1600 feet above sea level in Altadena, Calif., from which he can see 105 miles away with his naked eye to Santa Barbara Island, has written in commenting on *The Review's* description of the long-distance picture of Mount Rainier taken by Captain Albert W. Stevens. "Captain Stevens chose a poor time of year for making his photographs. . . . With much weaker filters from an elevation of 17,000 feet, I feel sure that much greater distances should show on the photograph if taken at the proper season. My home is 1,600 feet above the sea level. On clear winter days Santiago Peak in the Santa Ana Mountains, forty-four miles away, shows every canyon and detail so clearly that it is hard to believe it is not within a short walking distance. Catalina Island, sixty miles away, is clear but without such detail. . . . Almost any winter morning we see peaks in the San Jacinto range that are not less than 100 miles away. . . . In the north I have seen Mount Shasta from the level of the Sacramento Valley, perhaps 300 feet elevation, 150 miles away (180 miles after I had passed it on the train). 'The Mountain' (unfortunately named Rainier after a Frenchman * who never saw it) is a wonderful sight from Seattle ninety miles away. From mountain tops, other mountains 200 miles and farther are commonly visible. I believe Mr. Stevens's camera could easily reach 300 miles from an airplane." ☞ Mr. Johnson also called attention to a patently egregious error that slipped into the January issue during the transcription of copy. In the story on the burning of the non-magnetic ship, the *Carnegie*, it was stated that she had pig *iron* for ballast when in fact it was pig *lead*.

* Mr. Johnson is mistaken. Mount Rainier was discovered by George Vancouver and named in honor of Rear Admiral Rainier of the British Navy.—The Editors.

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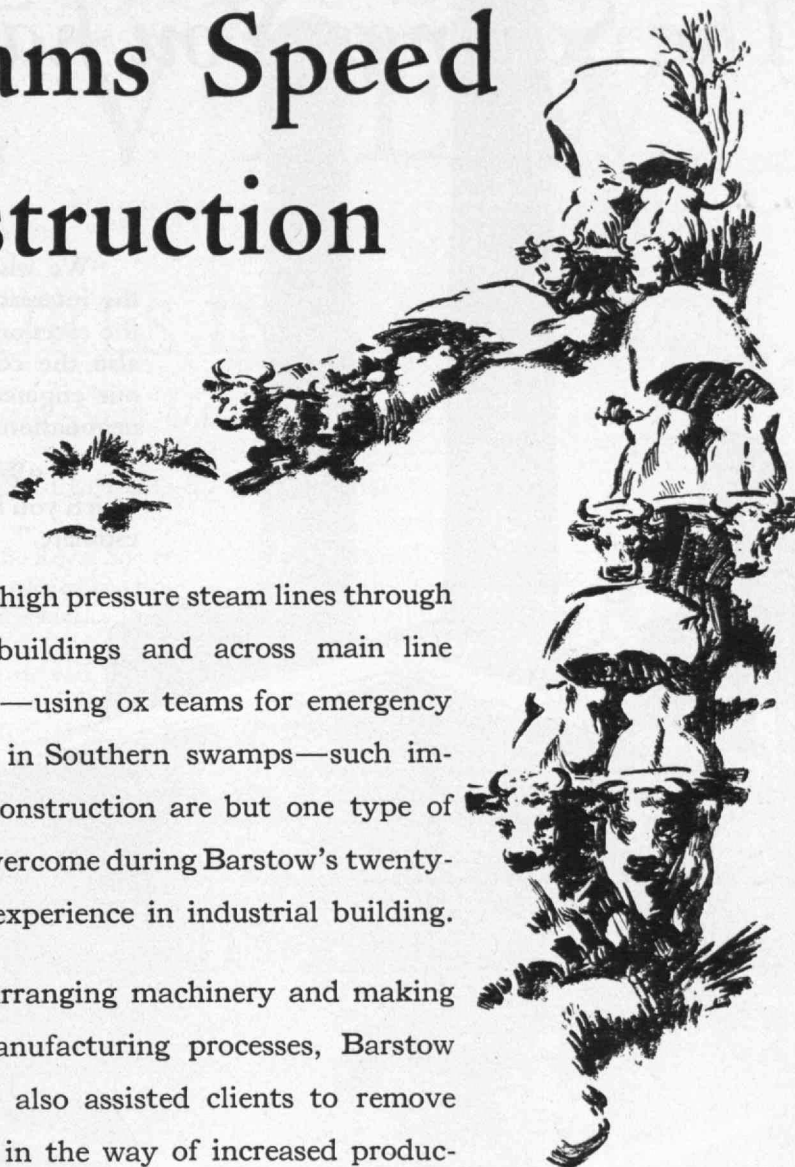
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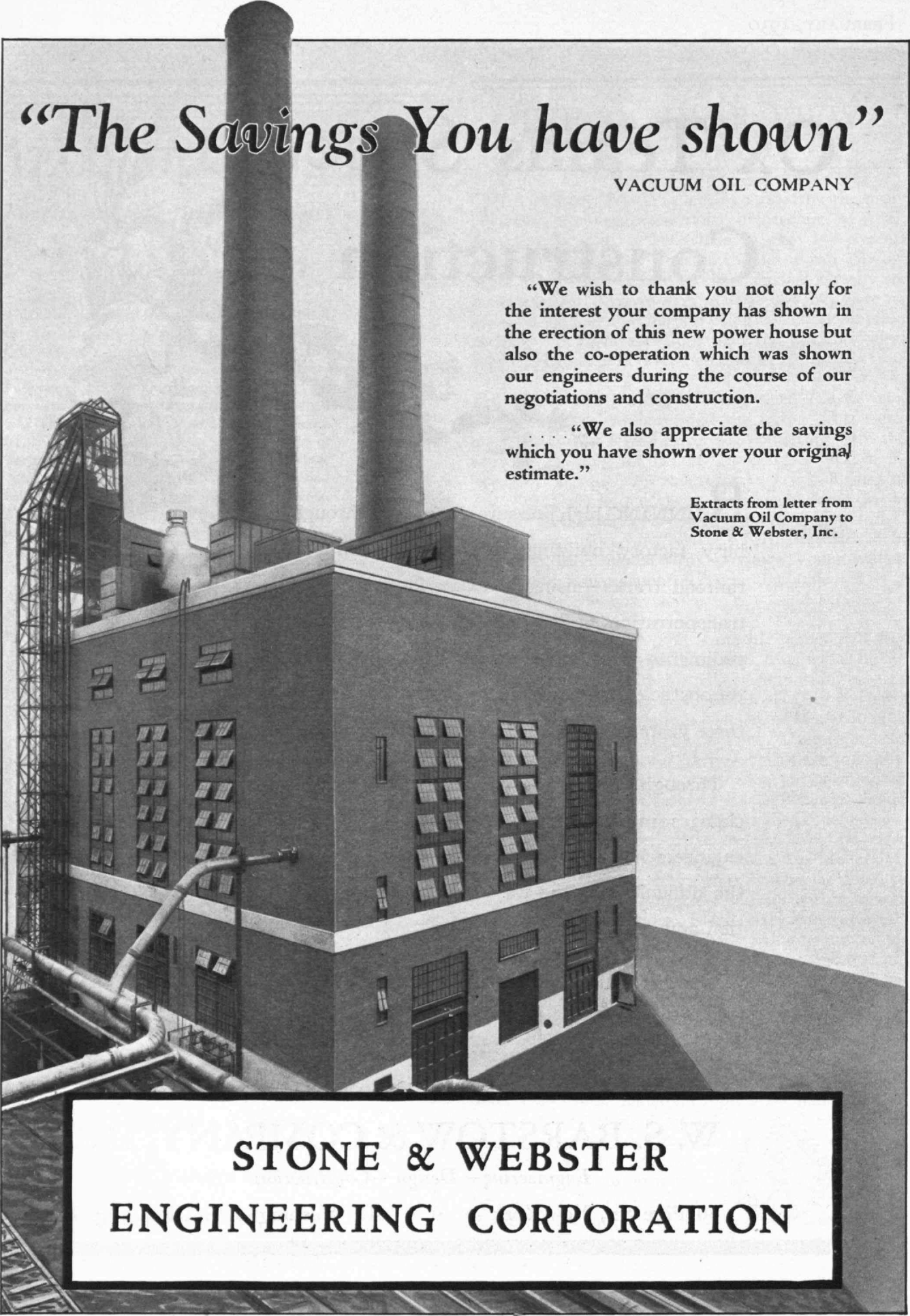


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The TECHNOLOGY REVIEW

VOLUME 32

FEBRUARY, 1930

NUMBER 4

ADVENTURES IN RADIATION

Finding New Uses for Ultraviolet

BY DONALD C. STOCKBARGER

IN the Philosophical Transactions of the Royal Society dated 1672 there appeared a letter to the editor from Isaac Newton, then Professor of Mathematics in the University of Cambridge:

"Sir, — To perform my late promise to you, I shall without further ceremony acquaint you, that in the beginning of the year 1666 (at which time I applied myself to the grinding of optic glasses of other figures than spherical) I procured a triangular glass prism, to try therewith the celebrated phaenomena of colours. And for that purpose having darkened my chamber, and made a small hole in my window shuts, to let in a convenient quantity of the sun's light, I placed my prism at his entrance, that it might be thereby refracted to the opposite wall. It was at first a very pleasing diversion to view the vivid and intense colours produced thereby; but after a while applying myself to consider them more circumspectly, I was surprised to see them in an oblong form; which according to the received laws of refraction, I expected would have been circular. . . .

"As the rays of light differ in degrees of refrangibility, so they also differ in their disposition to exhibit this or that particular colour. Colours are not qualifications of light, derived from refractions, or reflections of natural bodies

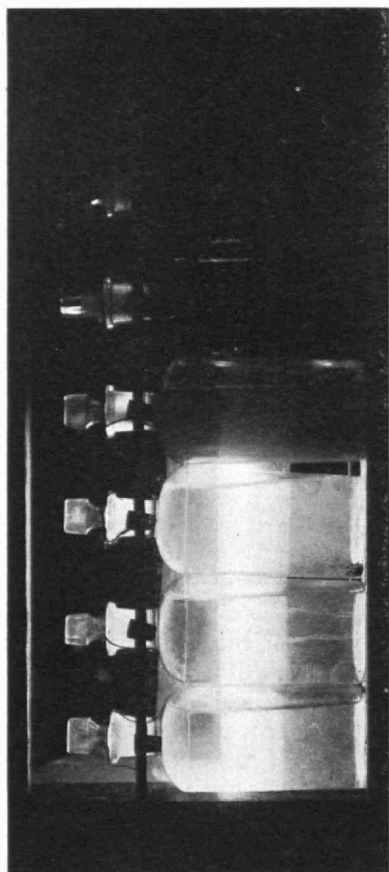
(as it is generally believed) but original and connate properties which in divers rays are diverse. Some rays are disposed to exhibit a red colour, and no other; some a yellow, and no other; some a green, and no other, and so of the rest. . . .

"The species of colour, and degree of refrangibility proper to any particular sort of rays, is not mutable by refraction, nor by reflection from natural bodies, nor by any other cause, that I could yet observe. When any one sort of rays has been well parted from those of other kinds, it has afterwards obstinately retained its colour, notwithstanding my utmost endeavors to change it. . . ."

Newton's discovery of the visible spectrum marked the real beginning of scientific investigation of radiation. The infrared and ultraviolet spectra were discovered almost simultaneously early in the Nineteenth Century by Herschel and Ritter, respectively. History tells us, however, that the effects of sunlight on the human body and on certain chemicals were recognized centuries before the discoveries of the spectra. Yet with all of the knowledge which had accumulated, no great progress was made in phototherapy and photochemistry until the invention of the powerful sources of ultraviolet late in the Nineteenth Century. These inventions



IN THE RADIATION LABORATORY: HIGH FREQUENCY ELECTRODE-
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opened up very large fields of usefulness for radiation and stimulated new research in many of the university and commercial laboratories throughout the civilized world.

The time came when the investigators realized that their knowledge of photochemical and phototherapeutic reactions was getting far ahead of their understanding of radiation itself, and therefore a new chapter of history dealing with the development of methods of measuring radiation was begun by such men as Boys, Paschen, Tyndall, and Rubens. But in spite of the need of the new knowledge, advance in this direction has not been

rapid because relatively few men have had either the facilities or the training necessary for the performance of such delicate work as that which is encountered in radiation measurements.

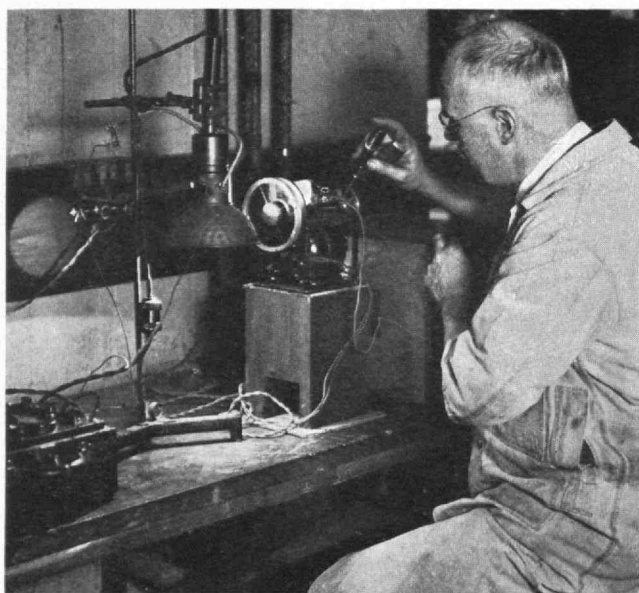
Nearly ten years ago the Cooper Hewitt Electric Company suggested to a member of the Institute staff that a valuable research problem would be a study of the quartz mercury arc lamp, a device now well enough known so that no description of it is necessary. In common with many radiation sources this emits not only a certain amount of light but also some heat rays, known as infrared, and other invisible rays known as ultraviolet. The problem was to analyze the radiation, *i.e.*, separate the different kinds of rays and measure the quantity of each. Today that would be looked upon as a relatively simple task, but ten years ago practically no suitable apparatus was to be found in any of the Institute laboratories. It was necessary to build most of the equipment and to work out special procedures with the aid of the scattered writings of the few men who had undertaken similar work before that time. The publications of Dr. Coblenz of the United States Bureau of Standards were particularly helpful. The results of those early tests in the new laboratory are not recalled with pride, for they were full of inaccuracies, but nevertheless some results were obtained and the Cooper Hewitt Electric Company saw enough possibilities in the future to warrant contributing a considerable amount of money and some excellent equipment for the founding of a radiation measurements laboratory.

The early location was merely a small corner in the Electrochemical Laboratory. There, many hours, day and night, were spent separating and measuring invisible rays much as chemists analyze foods, drugs, and the like. Then other radiation problems were suggested by various industries for the laboratory to study. These called for additional equipment so that within a few years lack of space was a real handicap. The little laboratory would have burst had not something happened.

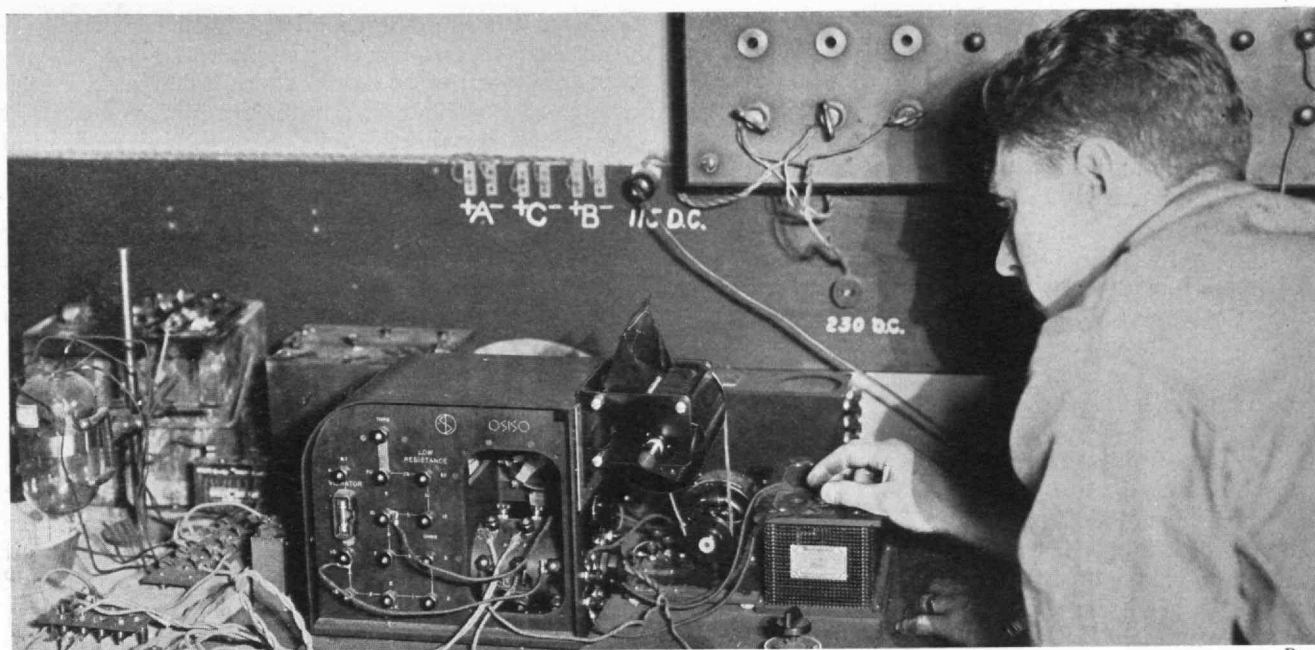
That something was official recognition in 1927 that radiation measurements was a suitable subject of instruction. It was felt that if industry was calling for help in solving radiation problems, then industry should be supplied with men trained to handle the work. Fortunate it was for the laboratory, therefore, that a moving day arrived and most of the apparatus was transferred to roomier quarters where several students and several members of the staff could work. Fortunate it was again that when the new room likewise became too crowded the present much larger space was found.

Here men are taught the theory of radiation measurements and are given ample opportunity to learn something concerning the art of putting the theory into practice. Undirected they would have to spend years to fit themselves to undertake the research problems which come to the laboratory almost weekly, for books on the subject are difficult to find.

The problems presented for study are not only numerous but varied in character. They have to do with the manufacture of such things as cloth, paper, rubber, leather, tin cans, glass, arc lamps, incandescent lamps, varnish, ink, chemicals, fire alarm boxes, and photoelectric cells; they pertain to questions of health, safety, communication, television and even magic. It may seem strange that a comparatively new laboratory should have so many different contacts with industry, and that such mysterious looking experiments as are in progress should have commonplace, practical applications. This is so, partly because the laboratory places particular emphasis on the



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APPARATUS FOR STUDYING THE EFFECT OF BOMBARDING GAS ATOMS WITH HIGH SPEED ELECTRONS. SEE PAGE 188

Davis

study of ultraviolet radiation which has found a place of increasing importance in everyday life. It is so also because the laboratory has expanded the scope of its field to include practical applications of radiation.

In one section of the laboratory a dozen or more strips of paper hang from a line like so many pieces of a Monday morning washing. Nearby is a peculiar looking lamp whose rays impart to the strips a greenish color. The manufacturer of the paper samples, which are representative of materials designed for use on milady's writing desk, has noticed that some of these become discolored when exposed to sunlight. He requested the laboratory to cooperate with him in his efforts to improve his products by exposing them to different kinds of radiation, preliminary to making color and folding tests in his own plant.

In another section might be found a row of tin cans freshly painted in gay colors being exposed to a powerful source of ultraviolet radiation. From time to time an attendant examines the painted surfaces to determine which ones have become dry enough to handle. After the paint has become thoroughly dry further tests will be made to find out whether the surfaces have become dull and whether any small cracks or blisters have appeared. This is illustrative of a fairly large class of investigations on rapid drying of paints and varnishes. It has been found that the time required to produce a thoroughly dried surface can often be reduced from hours or days to a few minutes. Sometimes the process goes along smoothly and satisfactorily but in the case of certain materials the final result is imperfect. It is the

laboratory's job to make a comprehensive study of the matter so as to be able to specify what kind of a lamp to use as a source of ultraviolet and how much it is safe to reduce the time of drying from that which would be normal under natural conditions.

Immediately upon entering the laboratory one detects the odor of ozone. It is a smell not unlike that of freshly washed clothes which have been allowed to dry out in the open. This gas, formed from oxygen, is being generated by the ultraviolet rays from a quartz mercury arc situated at the end of a large table and surrounded by a heavy black cloth in order to protect the skin and eyes of the man who is testing it. An analysis of the rays is being made so that a report can be issued to the owner of the arc, who uses it to give daily treatments for rickets to a small colony of white rats. It has been known for several years that rickets can be cured by exposure to certain kinds of ultraviolet radiation and it is to make a closer study of the matter that the biologist who owns the arc is carefully measuring out the quantities of the rays which he gives his small patients. Without such an analysis as is being made he would not



Davis

PORTRAIT OF AUTHOR MADE BY ULTRAVIOLET LIGHT IN A DARK ROOM

know how long to leave the rats under the arc. After he has completed the rat experiments he will give his findings to the medical world where they will be of great value in the treatment of rickets in children.

At another table sits a man with a pile of small squares of glass (see adjacent illustration). These he inserts in a complicated looking instrument meanwhile gazing intently through the eye piece of a telescope. What he sees is the scale of a very delicate electrical measuring instrument which tells him how efficient the little square of glass is in transmitting certain kinds of radiation. When he has finished his task he will be in a position to advise the manufacturer of the glass whether or not his product is exceptionally well adapted for glazing — greenhouses, perhaps. Several months ago similar tests were made on pieces of glass which had been removed from the solarium of a hospital. The authorities in charge of that institution had heard a rumor that the special glasses for transmitting the ultraviolet of sunlight had a tendency to lose their effectiveness after a few months of use. It is of general interest that the tests showed conclusively that such was not true. To be sure the glasses were not quite as efficient as when they had first been installed in the solarium but they were still in excellent condition and would remain so until they were broken. Naturally the authorities were very pleased to obtain the information and to be assured that the installation of the windows had not been a mistake. "Ultraviolet transmitting" glass might be compared with a gold ring which, although it soon loses its original high luster, nevertheless retains its color and its value until it is worn out. These glasses lose a little of their efficiency very quickly after they are installed but the change is not a serious one and it stops soon after it has begun.

Prior to one of the moving days the main storage cabinet was cluttered with a pile of small wooden panels some of which looked as though they had been freshly varnished and others as though they had gone through a fire. A few of them had surfaces which might have reminded one of a rare old violin. Someone submitted the panels with the hope that by exposing them to the proper kind of radiation they could be made to take on the mellowness of age. There are tricks in the manufacture of all kinds of things including "antique" furniture!

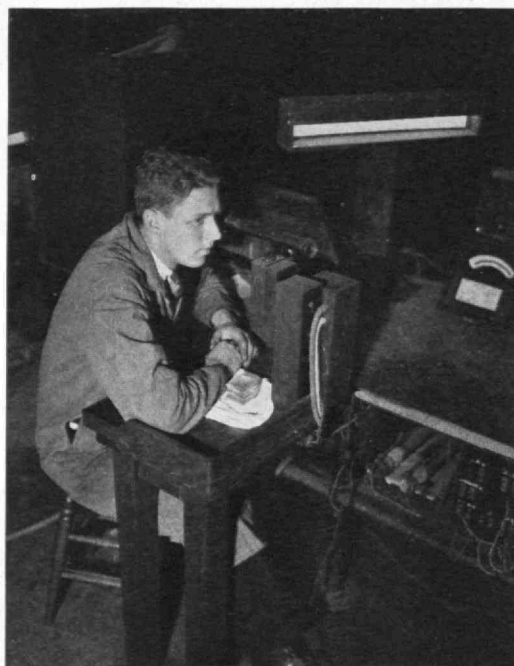
At one time a small table quite heavily loaded with beakers, flasks, test tubes, and bottles occupied an important place in the laboratory. In and among the flasks ran such a maze of glass and rubber tubing that the whole looked like part of a chemical laboratory. In the midst of that conglomeration of glassware was a tiny lamp whose feeble red light was hardly discernible at a distance. It

was such a strange outfit for a physical laboratory to be using that visitors regularly stopped to ask questions. And after receiving an answer they would almost invariably go away shaking their heads, for they were told that an attempt was being made to synthesize a chemical compound containing neon. Most people consider neon to be inert and consequently incapable of uniting with other elements. A discussion of the outcome of the particular experiment has no place here but it is relevant to add that there are a great many chemical reactions which cannot proceed without the help of some kind of radiation, and that the laboratory is often called upon to find out what kind of radiation is most suitable and how efficiently it is able to promote a certain reaction.

On a shelf-like bench fastened to one of the walls is a piece of apparatus which resembles an overgrown radio tube. Facing it is a peculiar kind of camera and over the two is thrown a heavy black cloth to exclude the light while a photograph is being taken. While it is rather unusual to take pictures in the dark, it is nevertheless possible when ultraviolet radiation is present. Actually in this case, however, the big vacuum tube is not posing for its portrait but a photograph is being made of the spectrum of a faint beam of invisible radiation sent out by it. This radiation is so weak that exposures of one to twelve hours are usually necessary in order to obtain a good picture.

Not long ago the laboratory was asked to make ultraviolet photographs of some bank rec-

ords which were a part of a court exhibit. As is well known, such photographs of altered documents have an advantage over ordinary ones in that the details of the original writing or printing can often be seen. Occasionally human portraits are made in a similar manner but ordinarily they possess no particular value other than that which arises from the uniqueness of the circumstances under which they were made. In some cases, however, abnormal skin conditions otherwise unsuspected are made evident and this fact is becoming of some importance to the diagnostician. Besides the practical problems which are attacked, there are as many which are purely scientific. One example will suffice. A long-time study is being made of the effect of bombarding gas atoms with high speed electrons. In general, radiation is known to result from the collisions, but some of the laws governing the process are still obscure. When those laws are found, a better picture of the atom can be drawn. And with that picture, the physicist will be better able to solve practical problems concerning atoms, such as how to make a more efficient source of useful radiation. It may sound like dry, uninteresting work, but in reality that is not true. Even the apparatus, (*Continued on page 210*)



MEASURING THE INFRARED TRANSMISSION PROPERTIES OF GLASS. SEE TEXT ABOVE



"ENGINEERING," A MURAL BY FRED DANA MARSH IN THE LIBRARY OF THE ENGINEERING SOCIETIES, NEW YORK

July

BUILDING A GREAT CITY

The Engineer's Contribution to Metropolitan Boston

BY FREDERIC H. FAY

WITHIN the present generation new and increased facilities for local transportation have enabled the population from the more thickly settled districts of our larger cities to spread out over adjacent and more open suburban territory. In its more recent decennial enumerations of population of the country, the United States Bureau of the Census has taken cognizance of this dispersion of population of our large cities. The Bureau recognizes that in many cases the number of inhabitants enumerated within city boundaries gives an inadequate idea of the population grouped about one urban center.

"In fact, in only a few of the large cities do the municipal boundaries closely define the urban areas. Immediately beyond the political limits of many cities, and connected with them by rapid transportation systems, are densely populated suburban districts which industrially and socially are parts of the cities themselves, differing only in the matter of governmental organization." * For this reason the Bureau of the Census, in the case of each city having 200,000 inhabitants or more, has delimited what it terms the "Metropolitan District," which includes, in addition to the city itself, those sections of the adjacent territory which are considered urban in character.

The rapid growth of population of suburban territory has affected different cities in different ways. In most cases it has resulted in the territorial growth of the cities themselves by annexation. Chicago is an example of a city which has grown in area nearly as rapidly as the growth in population of the urban district of which it is the center. In 1920, eighty-five per cent of the entire population of the Chicago Metropolitan District was found within the city limits, and today

it is probable that the city contains more than eighty per cent of the population of its metropolitan area.

Boston and Pittsburgh, on the other hand, are examples of cities which have not grown in area with the growth of population of their metropolitan districts. These two cities today are the only two in the country in which the population residing within the city limits is less than half that of the metropolitan district. In Pittsburgh this situation is of comparatively recent development. In Boston, however, it is one of long standing and for fifty years and more the population of the outside territory of the Boston Metropolitan District has outnumbered that within the Boston city limits.

For more than half a century the Boston district has maintained the position which it holds today, that of the fourth largest urban district of the country, being exceeded only by New York, Chicago, and Philadelphia. Boston, of all our large cities, was the first to develop as the center of an important metropolitan territory and the Boston Metropolitan District, therefore, was the pioneer metropolitan district of the country.

It is the purpose of this article to deal historically with the development of conditions which, of necessity, finally led to united action by Boston and certain other communities on matters of common welfare, and to describe the metropolitan agencies established by the Commonwealth of Massachusetts for meeting these needs.

BOSTON was first settled in 1630; the original town being located on a small peninsula, almost an island, connected with the mainland by a narrow neck. Beacon Hill, on which the State House stands, was the central eminence of this small natural peninsula, which lay to the east of present Charles Street and Broadway, within what is now known as the down-town business section and the

* Fourteenth Census of the U.S., 1920, Vol. I, page 62.



Ewing Galloway

THE GREAT LOS ANGELES SYPHON,
SUPPLYING THE CITY WITH WATER

North End. Topographically, the city has undergone radical changes. Most of the original small hills have been leveled. Beginning early in the last century the need for increased area for the town was met by filling the flats along the shore frontage, notably in the Back Bay, until today not one foot of Boston's original shore line remains.

When the first sewer was built is not known but it was earlier than the year 1700, for in 1701, when the population was about 8,000, the nuisance created by frequent digging up of streets to lay new sewers and to repair those previously built had become so great as to lead to the passage of a regulatory ordinance at a Town Meeting. Up to this time, and in fact for a century and a quarter thereafter until Boston had been incorporated as a city, all sewers were built by private enterprise.

The filling of the flats along the shore frontage necessitated the extension of the old private sewers whose outlets would have been cut off. The extensions in the filled areas were built with little or no slope, and in some cases the sewers actually ran up hill. The shore outlets were almost invariably below high tide level and were provided with tide-gates. As a consequence, the contents of the sewers were dammed back by the tide during the greater part of each twelve hours.

THE Massachusetts Board of Health, the first state board in the country, was established by legislative enactment in 1868. While it had state-wide jurisdiction, the principal reason for its creation was the insanitary condition resulting from the concentration of population in the drainage basin in and around Boston. The State

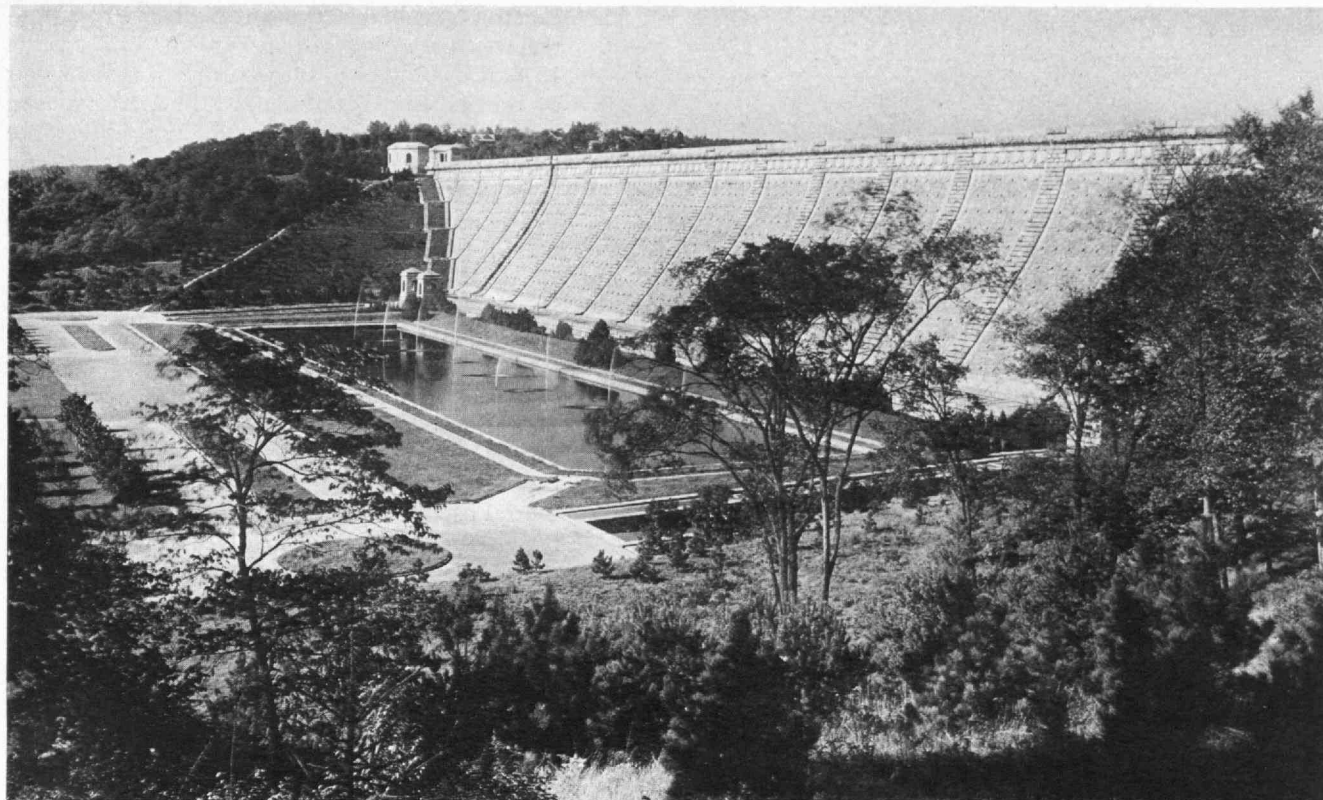
Board of Health early considered, and urged action upon, the drainage problem of Boston and its immediate surroundings.

Spurred to action by the City Board of Health, Boston set up a municipal commission in 1875 to study the drainage problem. The report of this commission recommended two systems of main and branch intercepting sewers, serving territories on both sides of the Charles River. The northerly system, which was to serve not only the Charlestown and East Boston sections of Boston but also portions of Cambridge, Somerville, Everett, Chelsea, and Winthrop, was not adopted at the time because of the failure of Boston to secure the voluntary coöperation of the other communities in which much of this system lay. The southerly system, planned to serve the city proper and parts of Brookline and of the Roxbury, Dorchester, and South Boston sections of Boston, lay almost entirely within the limits of Boston and was substantially that built immediately thereafter.

Having secured the necessary legislative authorization, the city built the Boston Main Drainage System between 1876 and 1885. It consists of intercepting sewers along the waterfronts of the city proper and South Boston, connected with, and taking all flow, other than heavy storm flow, from the old sewers which formerly had discharged directly into tidewater all along these waterfronts. These intercepting sewers connect with the main sewer leading to the main Drainage Pumping Station at Calf Pasture on the shore of Dorchester Bay. Sewage is received at this pumping station at a level from eleven feet to fourteen feet below low water; it is lifted by pumping about thirty-five feet; it is then carried under pressure through a tunnel or inverted siphon beneath Dorchester Bay to Squantum, in Quincy, where it rises above tide level and thence is carried by an outfall sewer in an embankment to reservoirs on Moon Island, whence it is discharged on outgoing tides into the waters of the lower harbor. Immediately after leaving the pumping station and before reaching the shaft of the Dorchester Bay Tunnel, the sewage passes through two parallel deposit sewers where solids are collected and subsequently removed. This intercepting sewerage system of Boston was the first great undertaking of its kind in the country.

While the Boston Main Drainage System took care of the great part of the nuisance caused by the discharge into the tidal waters around Boston of sewage from that city, it did not remedy the situation caused by other communities particularly those to the north of the Charles River. Voluntary coöperation by interested municipalities being ineffectual to meet this common drainage problem, the State intervened and, by legislation passed in 1884, created the Massachusetts Drainage Commission to consider and report on general systems of drainage for the relief of valleys of the Mystic, Blackstone, and Charles Rivers and the protection of the public water supplies within these valleys; also, to consider various methods of sewage disposal in these territories.

The commission found that on the several watersheds investigated crude sewage and industrial wastes were discharged directly to streams; that water supplies were menaced in a number of instances; and that the new art of purification of sewage, although greatly needed in these populous territories, had nowhere been put into practice.



Courtesy J. Waldo Smith

KENSICO DAM OF THE CATSKILL WATER SUPPLY SYSTEM FOR NEW YORK CITY. AN EXAMPLE OF BEAUTY IN ENGINEERING STRUCTURES

The public mind was not satisfied, however, that the answer to the problem had been found in the recommendations of the Drainage Commission. The legislature directed the State Board of Health to carry the investigation further and, in particular, to consider the question of disposal of sewage in the most thickly populated portions of the Mystic and Charles River valleys. The State Board of Health attacked the problem in a most thorough manner and its report to the legislature in 1889 is a noteworthy document. The Board made exhaustive investigations and experiments regarding methods of sewage disposal by filtration, by chemical precipitation, and by discharge into tidewater.

As a result of its investigations the State Board of Health recommended a comprehensive system of sewerage works, with discharge into Boston Harbor south of Deer Island, for communities north of the Charles River and in the Mystic River valley; this system being designated as the North Metropolitan System. For the disposal of sewage from certain municipalities in the lower valley of the Charles River, namely, Waltham, Newton, Watertown, Brookline, and the Brighton district of Boston, the Board recommended another system of intercepting sewers to be connected with the Boston Main Drainage System discharging into Boston Harbor.

This exhaustive report of the State Board of Health, made in 1889, was the final step and resulted in the passage by the legislature that year of the act establishing the Metropolitan Sewerage District and creating the Metropolitan Sewerage Commission to build, maintain and operate comprehensive sewerage systems to care for the sewage of the district. Thus there came into existence, in 1889, the first Boston Metropolitan District.

IN 1652, twenty-two years after the settlement of the town, the first organized attempt was made to supply water to the citizens of Boston. In that year a private company was chartered by the General Court of Massachusetts Bay Colony under the title of the "Water Works Company." This company built a reservoir near Dock Square to hold water conveyed to it by pipes leading from neighboring wells and springs. Its purpose was to extinguish fires and to supply the inhabitants living nearby with water.

In 1795, Boston was supplied, for the first time, with water brought from a distance. In that year the "Aqueeduct Corporation" was chartered and this private company brought water into the town from Jamaica Pond in Roxbury through four main pipe lines, the pipes being pitch pine logs through which holes were bored lengthwise. Two of these pipe lines were made of logs of four inch bore, and others of three inch, while the smaller pipes leading off from the main pipes had a bore of one and a half inches. This private company continued to supply water to Boston for half a century.

The first organized attempt to induce Boston to construct a system of water supply at public expense was made in 1825, three years after the town was incorporated as a city, and the subject of a municipally owned water system was agitated repeatedly for more than twenty years.

THERE was considerable opposition to the idea of having the city construct and own its water works, many citizens believing that water could best be furnished by competing private companies. Each year, however, the situation became more acute; water from Jamaica Pond



Ewing Galloway

CHINESE PUMP. THE BAMBOO WHEEL TAKES WATER FROM RIVER IN CUPS AND POURS IT INTO FLUME

was supplied to only a small portion of the inhabitants of the city, the greater part of the population being dependent upon wells which not only were becoming inadequate for the somewhat congested community, but were furnishing water of lessening purity. Finally, popular demand became so strong that legislation was secured in 1846 under which the city purchased Long Pond, now known by its Indian name of Cochituate, lying about eighteen miles west of Boston, in the towns of Natick, Framingham, and Wayland; and built a masonry aqueduct about fifteen miles long through which water from the lake was brought by gravity to a reservoir in Brookline. Lake Cochituate water was first furnished to the inhabitants of Boston in 1848 when the population of the city was about 127,000. In the early Seventies, it became apparent that Lake Cochituate was inadequate to meet the needs of the growing City of Boston, and that additional water must be obtained elsewhere. After investigation the city decided to secure water from the Sudbury River watershed lying immediately to the west of Lake Cochituate.

In the Sudbury River Basin, Boston built artificial reservoirs from time to time as required, and when taken over by the Metropolitan Water District in 1895 the Sudbury River System consisted of one natural pond, five completed reservoirs and a sixth reservoir under

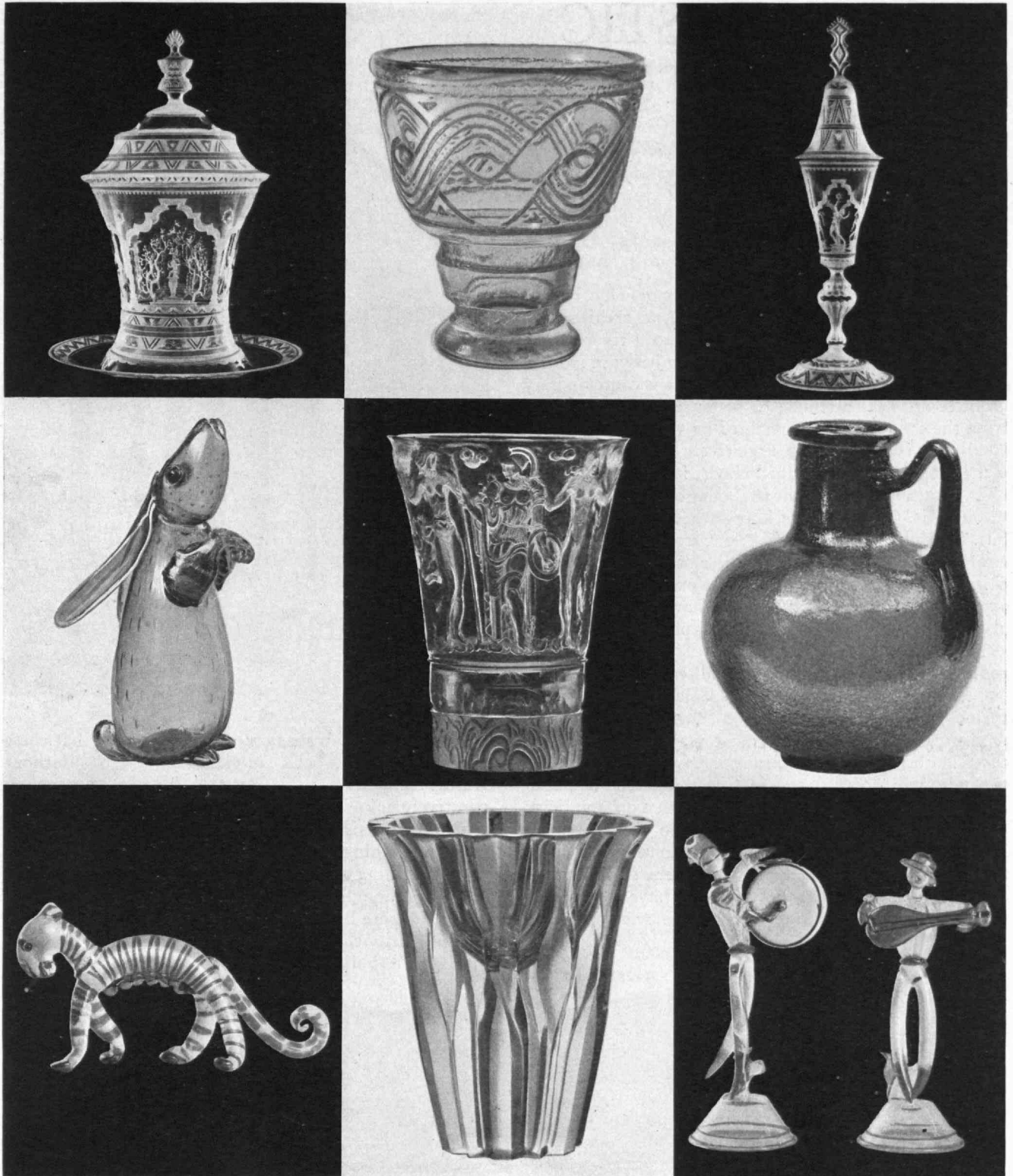
construction. Water from the Sudbury River System was first introduced into the City of Boston in 1878. It is brought to the Chestnut Hill Reservoir by the Sudbury Aqueduct, about sixteen miles in length. The Sudbury and Cochituate aqueducts are wholly independent.

In 1893 the problem of adequate water supply had again become most pressing, not alone for the City of Boston but also for most of the cities and towns in Boston's nearby territory. Again the State Board of Health was directed by the legislature to make an important investigation, this time of the broad question of a metropolitan water supply. In its comprehensive report submitted in 1895, the State Board of Health carefully analyzed possible sources of additional supply for the metropolitan territory. Lake Winnepesaukee, in the central part of New Hampshire, was rejected both because of the expense involved in bringing its water nearly 100 miles to Boston and because of the political complications involved by using a source in another state. Water could be obtained from the Merrimack River above Lowell, Mass., without encountering such serious interstate complications, but that supply would have been expensive to develop, particularly as the water of the Merrimack receives the drainage of New Hampshire's most populous communities, making filtration a necessity.

In the South Branch of the Nashua River above Clinton, however, the State Board of Health found a source of additional water supply which it considered entirely satisfactory. The stream drained a watershed which was not thickly populated and a supply of surface water of good quality could be secured. The reservoir proposed by the State Board of Health for the South Branch of the Nashua River would be capable of supplying nearly twice as much water as the Sudbury and Cochituate systems combined.

The Massachusetts Legislature of 1895 adopted the recommendations of this comprehensive report of the State Board of Health. It passed an act creating the Metropolitan Water District; providing for the acquisition by the district of the supply systems owned by the City of Boston; and establishing the Metropolitan Water Board, to administer the affairs of the district and to develop the South Branch of the Nashua River as an additional source of supply. The Metropolitan Water Board was charged with the duty of supplying water wholesale to the cities and towns of the Metropolitan Water District. The distribution of this water to the inhabitants of the several communities remained under the charge of the municipalities themselves.

PREVIOUS to 1875, the principal pleasure grounds in the City of Boston were the Common and the Public Garden, although there were also a number of smaller public grounds and squares. The Common had been set apart for the use of the inhabitants soon after the settlement of the town in 1630 and, until the beginning of the Nineteenth Century, it was used chiefly as a pasture. It has an area of forty-eight acres. (Continued on page 210)



Modern Glass Technology

Foreign glass workers have achieved enviable prominence in the making of decorative glass. The examples illustrated above are drawn from the second international exhibition of industrial art, this year on exhibition successively in leading American museums, sponsored by the American Federation of Arts.

In the upper row, left to right: engraved banquet table

piece, Sweden; transparent crystal vase, height 9½ inches, France; engraved banquet table piece, Sweden.

Middle row, left to right: Martinuzzi rabbit, height 13 inches, Italy; beaker engraved in cameo work, height 8 inches, Austria; Martinuzzi vase, height 13 inches, Italy.

Bottom row, left to right: modeled tiger, Italy; cut crystal vase, Germany; blown glass jazz musicians, Italy.

MODERNISTIC ARCHITECTURE

Efficiency Displaces Beauty and Blights Design

BY A. W. K. BILLINGS, JR.

GOOD or bad, sound or false, lasting or fickle, beautiful or ugly — what is *modernistic* architecture? The question is not amenable to a rigorous answer, but let me begin by distinguishing between modern and modernistic. *Modernistic* architecture is contemporary architecture that attempts to be extreme and to depart from the conventional. Compared by volume of building to all that is *modern*, it is of relatively small importance. Yet it is gaining, it is talked about, it is admired, criticized, sponsored, laughed at. Some of our schools are teaching it. Others do not know whether to teach it or not. Still others eschew it. A few architects have been converted to its cause. Many will not accept it as anything more than a passing fancy, an exaggerated conception. The laity, in the main, have no ideas about it, in fact, do not understand its philosophy.

The over-ornamented buildings of the Nineteenth Century, intricately and indiscriminately embellished with architectural splendors of all periods; ginger-bread houses adorned with jigsaw extravagances; Floridian stage-set play houses — all of these, both in America and Europe have given the architect with modernistic leanings, something upon which to base his claims for a new architecture based on simplicity and utility. General public reaction to the superficial lavishness of what was fifty years ago considered beautiful has tended to give a sweet reasonableness to the modernistic logic. Post-war conditions also have contributed to the modernistic movement. Europe was poor and

needed buildings. It was necessary, therefore, that these new buildings be efficient in planning, designed without waste space and free of all ornament. There are other comparatively unimportant reasons, arising from human vanity, for emphasis on modernistic architecture: a desire to create something different; the aspiration to live in and own something unusual; the obsession to be, do, or seem different (though not necessarily better).

Architecture has, in the past, been judged by the layman primarily through the pleasure it brings to the sense of sight. A building well proportioned, harmoniously

MODERNISTIC CATHOLIC CHURCH IN FRANKFURT, GERMANY. BELOW: PRIMITIVELY MODERN HOME IN THE REICHSKANZLER PLATZ. THE ANGULAR DESIGN IS DICTATED BY A DESIRE TO ADMIT A MAXIMUM OF AIR AND LIGHT



P. & A.

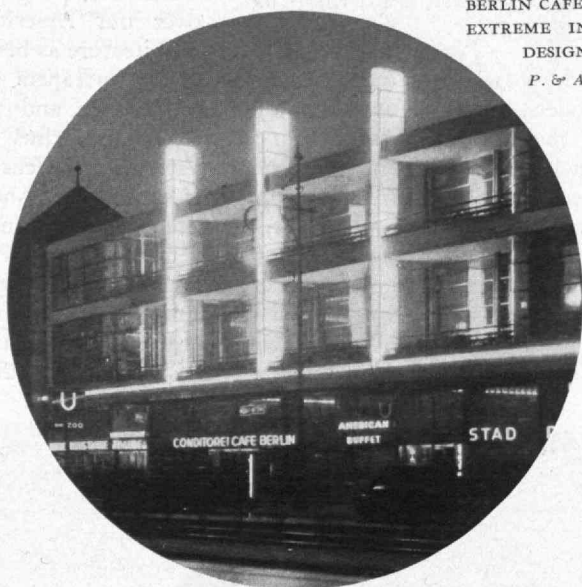


P. & A.

designed, thoughtfully situated has been called beautiful. Beauty in architecture has been accepted as a quality which gives one aesthetic delight and satisfies the moral sense.

The extremists in architecture, such as Bruno Taut* in Germany, Le Corbusier† in France, and others of the same school have cast aside the generally accepted connotation of beautiful and have adopted entirely new standards. They have said: "Efficiency is the most important element in design. The plan must be efficient — if it is efficient it is beautiful. If it is not efficient then it cannot be beautiful." Their idea of beauty is similar to that of the machinist, who, through arduous labor, careful analyses, great ability, has produced a machine, efficient, simple, clever, unlike any other.

The buildings that these architects have designed show at a glance their principles. Observe the home shown on



BERLIN CAFÉ,
EXTREME IN
DESIGN
P. & A

Page 194. Here is a type which is primarily efficient. Every room is situated just where it should be for the greatest convenience. Every window has the exact orientation and size conducive to maximum light and air. Here is a building as efficient as the highly perfected mechanism of the automobile, a stop watch, an airplane. But what about proportion, picturesqueness, aesthetic appeal? They are standards of slow life, now dead. They have nothing to do with modernistic design.

Such is the modernist's point of view. The buildings which result are box-like, harsh, cold, uncomfortable to the aesthetic senses. Classical pilasters, cornices, columns, moldings, and ornament are superficial and ostentatious. Pitched roofs, diamond shaped window panes, hand-hewn timbers, dormer windows, are obsolete because they are inefficient.

In short, the modernistic architect has followed his principles to an extreme conclusion. He has ignored the aesthetic desire for the picturesque, the colorful and the restful. He has sacrificed most of the prerequisites of

beauty on the altar of efficiency. It is this worship of a false God that has caused the modernistic architect to forfeit his strongest claim to immortality. Only that architecture having the prerequisites of beauty has ever prospered and survived.

The fact that the deck and bridge construction of an ocean liner is a very logical and straightforward construction is no reason why a house built to resemble an ocean liner is also good, — although some architects would have us believe so. Well designed, picturesque cottages of the Seventeenth Century did not resemble stage coaches or Elizabethan galleys.

We cannot have, except in rare cases, the greatest efficiency combined with the most beauty, the best proportion, the most pleasing plan. Architecture must be a series of compromises. If a building is to be well proportioned and satisfying to the eye, it usually, though not always, follows that a sacrifice must be made somewhere in its efficiency. Perhaps a little added ceiling height will make a more agreeable proportion to a



Ewing Galloway

HOME OF A STUTTGART NEWSPAPER.
LIGHT AND AIRY IN PLAN; PLAIN AND
UNSIGHTLY IN FORM

single room, or to a whole exterior. If such be true, then the inefficiency of adding a little waste space is overbalanced by the added attractiveness of the building. It seems just as basically wrong to sacrifice all beauty for the sake of efficiency as it is to put up buildings which are well-designed and beautiful by appearance yet totally lacking in good planning. A well-balanced architect goes to extremes in neither one direction nor the other.

The age old fundamentals of good design still exist. Modernistic architecture may contribute a modicum of new ideas, but it can never displace them.

Do not confuse the modernistic architecture which I have been discussing with other phases of modern architecture. New types of construction, new economic conditions, new social conditions have literally thrust upon us a new type of building. Call it a style if you wish,

* See MODERN ARCHITECTURE, by Bruno Taut. \$12.50. x+212 pages. New York: A. & C. Boni.

† See THE CITY OF TOMORROW, by Le Corbusier. \$7.50. 320 pages. New York: Payson and Clarke.

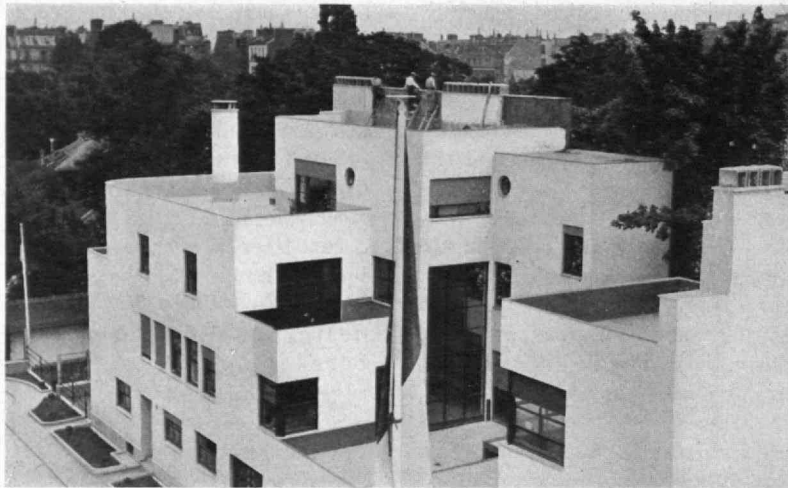
although it will be the privilege of historians of the future to name it. It has been evolved to meet new demands, but it has been governed by the fundamentals of architecture, by proportion, logic, beauty.

Industrial buildings are in a class by themselves, and unlike the home, belong strictly to the present day. It seems very natural that their architecture should be modern, for there is nothing in the past to base it on. That such buildings have, in general, been built without superfluous ornament, and with the simple object of making them serve their purpose, has resulted in their being, in the modernist's estimation, eloquent examples of fine architecture. We agree that grain elevators, Ford factories, cement plants, blast furnaces, are good in that such buildings are logical solutions of their respective problems. But they are not beautiful by our definition of the word. Extremists go on the assumption that the warehouse, the silo and the factory are efficient, logical, and therefore

beautiful. And that all buildings (including the home) should be beautiful by having the same principles applied to their design. They have, in other words, gone too far in this direction and not far enough in the matter of comfort, beauty and satisfaction of the inborn aesthetic needs of the people.

European modernistic architects are wont to skip lightly over our American architecture as being undeveloped and inconsequential. Our skyscrapers are modern if ever there existed a modern building, and it is in their design that modern architecture has thus far reached the height of its splendor. With no precedent to speak of, they have developed in a remarkably short time. They are logical for city life, efficient for business enterprises, inspiring, stalwart emblems of progressiveness. Certainly many of them are beautiful. The worst of them are beautiful by contrast to the machine-like block housing systems so prevalent in Europe, and so much admired by extremists.

(Concluded on page 216)



A PARIS RESIDENCE. SIMPLE, STRAIGHTFORWARD, EFFICIENT, BEAUTIFUL — OR BOXLIKE, HARSH, CUBISTIC, UGLY?

Wide World



By Burton Holmes from Ewing Galloway

AMSTERDAM APARTMENT BUILDING. MODERN YET IMPRESSIVE; EFFICIENT YET WELL DESIGNED



THE TREND OF AFFAIRS



Sub-Atomic Energy

"WINGS OVER EUROPE," one of the Theatre Guild's still current plays, presents as a principal character a youthful scientist who has discovered a method of loosing enormous stores of sub-atomic energy and, thereby, a means for destroying the world or giving its possessor unlimited powers. To be sure the science of the stage is usually bad science; the dramatists in creating illusion, even if they knew science, would probably employ it in a fictitious manner.

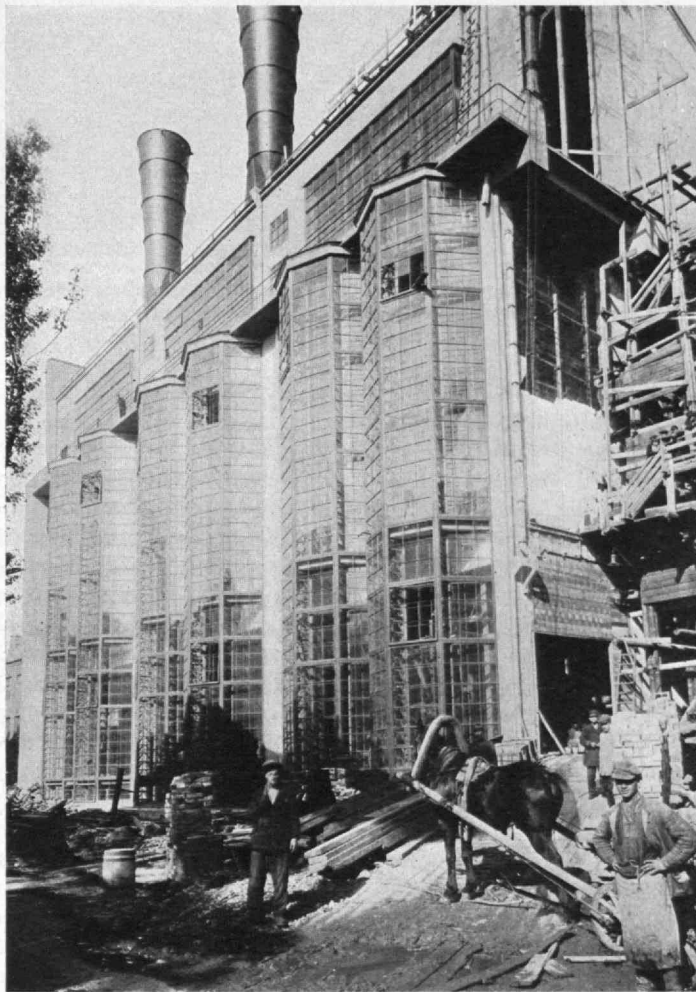
The release of sub-atomic energy, however, as presented in "Wings over Europe," is a straw baby that disturbs the minds of a good many people. It was fortunate indeed that Dr. Robert A. Millikan, in his presidential address at Des Moines before the Association for the Advancement of Science, took occasion to deny the charge that science is giving children matches with which to play by its preparations to tap enormous stores of sub-atomic energy.

Dr. Millikan had in mind the charge made by Professor Soddy of Oxford and the subsequently expressed apprehensions by the Bishop of Ripon. "She [science]," says Dr. Millikan, "has kept steady since Mr. Soddy raised the hobgoblin of dangerous quantities of available sub-atomic energies and has brought to light good evidence that this particular hobgoblin, like most of the bugaboos which crowd in on the mind of ignorance, was a myth.

"It is exceedingly fortunate that Mr. Soddy's fears did not at the time he uttered them induce a terrified humanity, like a child frightened by its fear in the dark, to stop its efforts to get more light. . . .

"Now the new evidence born of new scientific studies is to the effect that it is highly improbable that there is any appreciable amount of available sub-atomic energy

for man to tap anyway; in other words, that henceforth men like the Bishop of Ripon, who are living in fear lest some bad boy among the scientists may some day touch off the fuse and blow this comfortable earth of ours to star dust, may go home and henceforth sleep in peace with the consciousness that the Creator has put some fool-proof elements into his handiwork, and that man is powerless to do it any titanic physical damage anyway."



THE STRIKING BOILER HOUSE OF THE MOSCOW MUNICIPAL ELECTRIC WORKS

Paul Ettinger

The Safest Plane

AN AIRPLANE which climbed steeply into the skies and landed with a run of only thirty feet to win \$100,000; wounded feelings and several lawsuits. So came to a close the Safe Aircraft Competition of the Daniel Guggenheim Fund for the Promotion of Aeronautics, which, having spent more than \$5,000,000 in the space of a few years, now slips a new page into the loose-leaf binder of the history of aviation in America, and, objectives attained, ends its existence.

Having passed the eighteen requirements for the theoretically safe airplane, the three-place cabin biplane, *Tanager*, designed by the Curtiss-Wright Corporation, won the preliminary award of \$10,000, and after the final tests, Captain E. S. Land, S.M. '07, Vice-President of the Guggenheim Fund, made the award.

Aeronautical engineers and members of the board of judges, among them Edward P. Warner, '17, one-time Head of the Course in Aeronautical Engineering at Technology and Assistant Secretary of the Navy for Aeronautics, and now an editor, watched Lt. Stanley M. Umstead, Army pilot, drive the *Tanager* up in an almost vertical climb to hurdle a tower and land in thirty feet. The pilot called it the safest plane he ever flew.

Said Captain Land in presenting the final award: "Moving masses cannot be made fool-proof but they can be made safe. Kinetic energy can always do damage to a



Ewing Galloway

AIR VIEW OF PRESTON, LANCASHIRE, ENGLAND, WITH ITS MILLS AND VAST NUMBER OF TENEMENTS SURROUNDING THEM. THE CONGESTION OF THE HOUSES OF THESE MILL WORKERS IS OBVIOUS. COMPARE WITH THE MODEL VILLAGE SHOWN ON OPPOSITE PAGE AND READ "PURBLIND CITIES" ON PAGE 200 FOR COMMENTS ON SIMILAR AMERICAN COMMUNITIES

fool. The Fund's idea was to see a plane developed that the lay pilot could fly with satisfaction, security, efficiency, and safety. The fundamental idea of the Fund throughout this competition was: 'What we want in aviation is progress.'

"Tangible results are before you today. There is nothing revolutionary about the winner but there are a number of evolutionary ideas transplanted from the design board to the air in a flying competition in a most efficient manner. American aviation may well be proud."

Theodore P. Wright, '18, chief engineer of the Curtiss-Wright Corporation, and Robert R. Osborne, project engineer, were given credit for the design of the *Tanager*. "We started two years ago," said Osborne, "and spent the first six months drawing pictures." Five planes were designed before the *Tanager* was chosen.

The nearest competitor was a Handley-Page airplane which did not fulfill all the rigid requirements of the competition. Frederick Handley Page has brought suit against the winner for infringement of patents in building the *Tanager* with slotted wings. And Professor Alfred Leight, Chilean inventor and engineer, whose bird plane failed to meet requirements, charges patent infringement against Handley Page.

Originally more than a hundred planes were scheduled for competition. The number dwindled to twenty-seven formal entries, and of these only fifteen were finally presented at Mitchell Field for demonstration.

From the Daniel Guggenheim Fund for the Promotion of Aeronautics came the funds which built the Daniel Guggenheim Aeronautical Laboratory at Technology. Many other engineering colleges benefited from the same source. Now, in the words of Daniel Guggenheim, the founder, "Our objectives have been attained. The plane sought is built and flying."

Citadels of Din

HEADWAY is reported by New York's Noise Abatement Commission in its study of metropolitan hub-bub and means of decreasing it. Sensitive instruments are being actively moved hither and thither making records of the tumult at various points on Manhattan Island for subsequent laboratory investigation; increasing consideration is being given to the baneful effects of noises on humans and to enlarging the output of workers by providing for them quieter environment. No less than sixteen New York civic organizations, representing billions of dollars of property, are now combined to make war on the racket.

Dr. E. E. Free, whose five years of personal investigations led to the appointment of New York's present Commission, has estimated that on the streets of modern cities people are from one-third to one-half deafened by the din and roar of the mechanical contrivances that surround them. No less an optimist than Thomas Alva Edison goes further and has been quoted as predicting that increasingly noisy cities will end by deafening all their citizens permanently.

Though New York's effort, as befits its magnitude, is the most concerted and comprehensive yet undertaken, it is not unique. In England the matter has been brought to the attention of the Minister of Health by a joint deputation from the British Medical Association and the People's League of Health and recent information from Germany also shows that investigations are going on there. One German report states that a group of skilled workers, assembling a mechanical device in a room adjacent to a boiler shop, had seventy-five per cent of their products rejected as imperfect, but, upon transfer to quieter surroundings, rejections dropped to five per cent



Ewing Galloway

VILLAGE, NEAR ROSSINGTON, DONCASTER, BUILT TO HOUSE WORKING MEN AND THEIR FAMILIES. IN THE LAST FIVE YEARS MANY PROJECTS OF THIS SORT HAVE BEEN CARRIED OUT IN ENGLAND. ALL HOUSES ARE SERVED BY ONE HEATING PLANT. MODERN CONVENIENCES, SANITATION AND OTHER ADVANTAGES FURNISHED AT MODERATE RATES. CONTRAST WITH DISTRESSFUL CONDITIONS ON OPPOSITE PAGE

and output increased more than thirty per cent. In another German instance, stopping a noisy fan raised production fifteen per cent in spite of poorer ventilation.

Interrupted sleep and frayed nerves are the common lot of city dwellers, all of whom, says Robert Armstrong James, himself an English authority, are neurotics to whom sleep is indispensable. "Generalized auditory degeneration," is the expression applied by C. P. Wilson, writing in the *Nineteenth Century and After* of London, to the well-known occupational disease experienced by boiler workers, taxi drivers, and mechanics exposed to a constant bombardment of noises.

But sudden and violent noises, although stimulating to the naturally sluggish and unambitious, are admittedly equally disturbing to normal persons and injurious to their health. Experiments, undertaken during the course of the present New York study at the Bellevue Hospital, have already yielded certain supporting data. The method has been to observe the reactions on blood pressure, heart action and brain pressure of varying noises from mild ones up to the sudden bursting of a paper bag behind the patient's back. The conclusions set forth in a preliminary report list five harmful effects:

"1. Hearing is apt to be impaired in those exposed to loud noises.

"2. Noise interferes seriously with the efficiency of the worker. . . .

"3. In the attempt to overcome the effect of noise, great strain is put upon the nervous system, leading to neurasthenic and psychasthenic states. Because of the incessant noise of the city, quiet needed for recuperation has to be sought in the country.

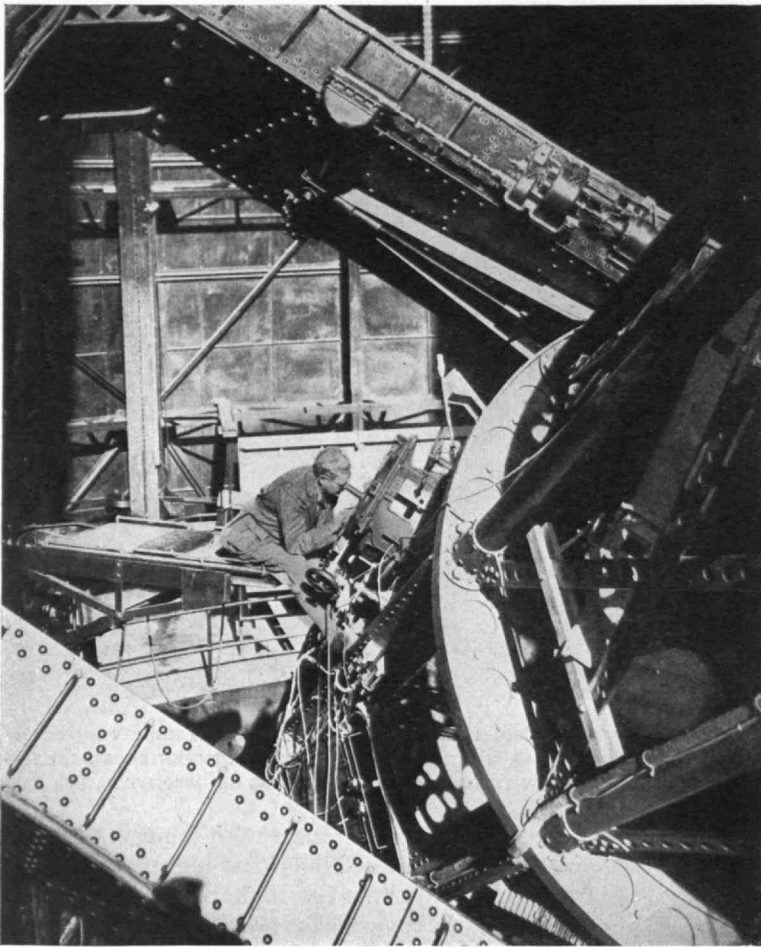
"4. Noises interfere seriously with sleep, even if a few become tolerant. All noises on streets and within doors should be minimized during the sleeping hours (11 P.M.

and 7 A.M.). Day noises interfere with innumerable convalescents in hospitals and in private homes throughout the city, and with persons like night nurses, typesetters, and others who are compelled to sleep by day.

"5. It is well established that the normal development of infants and young children is seriously interfered with by constant loud noises."

Indoors already a good deal of hushing has been accomplished, for business has come to a realization, in a general way, of the impaired efficiency that results from noise. Within six months, some forty New York financial houses have been sound-treated and the New York Life Insurance Company Building, designed by Cass Gilbert, '80, may be considered a forerunner of the "noiseless skyscraper." It is extraordinary in its quietude for more than 400,000 square feet of it have been insulated.

First in importance is the attention which was given the 2,180 windows, their frames of bronze and glass being heavier than usual and so designed that the windows rest in a cushion. Every detail about them is kept fast on the theory that one rattling screw in a frame soon means a rattling window, a kind of broadcasting station for every noise rising from the street. This principle of heavy glass and heavy frame held in a bronze cushion was extended to partitions used throughout the many floors of the insurance company's offices and the reduction of noise from outside, and its better control inside, have materially reduced the number of partitions required. A majority of the 2,180 windows are closed a large part of the time, and can be closed all the time, without discomfort, for they are only a supplementary means of ventilation. Every one could be sealed and the thousands of workers suffer no bad effect. This construction presages the new buildings that are to come. New insulating materials are being evolved and new quieting devices discovered.



Ewing Galloway

OBSERVING THE STARS THROUGH THE 100-INCH TELESCOPE AT THE MT. WILSON OBSERVATORY IN PASADENA, CALIF.

TRAFFIC and street noises obviously create a good deal of any modern city's uproar, as three inches of snow have demonstrated by reducing the volume of New York's sound a fourth. Dr. Donald A. Laird, Director of the Psychological Laboratory at Colgate University, claims that the noise intensity at the corner of Tremont and Stuart Streets in Boston "is barely forty sensation units where there is no traffic. But with traffic present, this intensity quickly rises to sixty-five units." Dr. Free asserts that in the congested portions of a typical American city "about three-fifths of the noise is produced by automobile trucks, about one-fifth by street cars, and the remaining fifth by excavation and building machinery, motor horns, and other miscellaneous sources."

Stricter enforcement of motor discipline can be expected automatically to diminish the screech of brakes and the squawk of motor horns. Traffic lights will also aid in the retirement of traffic officers' whistles, but further legislation will be imperative to cope with many of the other nuisances.

Dr. Free says he is convinced "that one simple regulation denying the city streets to any vehicle, horse-drawn or automotive, having any loose or rattling part would decrease city noise, except perhaps on street-car streets, by at least fifty per cent. Combined with a few equally reasonable regulations about public radio loud-speakers, useless tooting of automobile horns, mufflers on

excavating machinery, and the like, this would reduce the noise of most cities to quite tolerable levels with scarcely any cost or business interference. The servicing of trucks, automotive experts report, probably would more than pay for itself in lower upkeep and longer life."

If the Noise Abatement Commission concurs in Dr. Free's belief, any steps taken to put his proposals into effect should meet with overwhelming popular favor. Of course, cognizance must be taken of special conditions in New York where many persons are up at all hours and insist upon making a joyful noise, or listening to what somebody else thinks is joyful. The Sanitary Code of New York has for some years specified that roosters are forbidden to crow at night, that "getting a dog to bark all night" may mean a fine, that cattle, pigs, sheep, and chickens passing through the city in trains to their finales must be kept still. These infringements the Noise Commission will, presumably, consider closed issues. But, as yet, no workable suggestions have been proposed to muffle crying babies, or dogs that bark of their own accord, or talking neighbors, all of which in time must yield to the inexorable march of the abaters.

Purblind Cities

ALREADY The Review has many times asseverated that the adoption by American cities of comprehensive and intelligent regional plans, as well as methods for noise and smoke abatement, is imperative if we are to have metropolitan areas free from the chaotic

and choking congestion, the nerve-wracking roar, and the filth that is beginning to prevail. The immediate need is that the ordinary citizens as well as the office-holders recognize the acuteness of the problem, for its solution depends upon the coöperation of every component of a metropolitan community. Professional city planners, architects, physicians, and social critics have long perceived the need and shouted about it. In books, speeches, and the press their pleas are growing into a crescendo that can hardly fail to move municipal constituencies to action.

The Chairman of the Committee on City and Regional Planning of the American Institute of Architects, Charles H. Cheney, has prepared a report on the work carried on in this field during 1929. Three-fourths of the buildings erected in 1929 were "so ugly, so badly planned, so inappropriately located or on such narrow or inconvenient streets as to have been a liability instead of an asset, almost from the day they were completed," says he. As a natural result of man's inclination to destroy what is ugly in buildings, this indiscriminate construction "is the greatest economic waste of our time."

Mr. Cheney counted 750 planning commissions operating in the United States and 840 cities which have some kind of zoning regulations. Most of these commissions or cities, however, are badly handicapped by lack of funds and the quality of their work is yet inadequate. Of the

Beauty in the Machine Age



SHADES AND SHADOWS

A morning snapshot of sun rays streaming through an east window of the Grand Central Terminal Concourse, New York. On the balcony can be seen two coaches of the DeWitt Clinton train of 1831

really great plans formulated in 1929, the New York Regional Plan is the most notable, ranking with the proposed development of the National Capitol recently authorized by Congress at the urging of President Hoover

and Secretary Mellon. The St. Louis water-front development, the Chicago development of its lake-front system, and Philadelphia's great regional plan also represent hopeful progress.

Mr. Cheney studied apartment house architecture and he finds that apartment houses which occupy only fifty or fifty-five per cent of the land on which they were situated, have a much greater value than those using up to seventy per cent. The U-shaped apartments are the most profitable and sought after by permanent tenants. "The social well-being and the future stamina of our citizens require that we give all families plenty of room, sunlight and air to breathe, and that we do not allow them to congest too many under the same roof, rubbing elbows on the stairs, bringing about the looseness in living and morals which is so evident in the apartment-house cities of Europe."

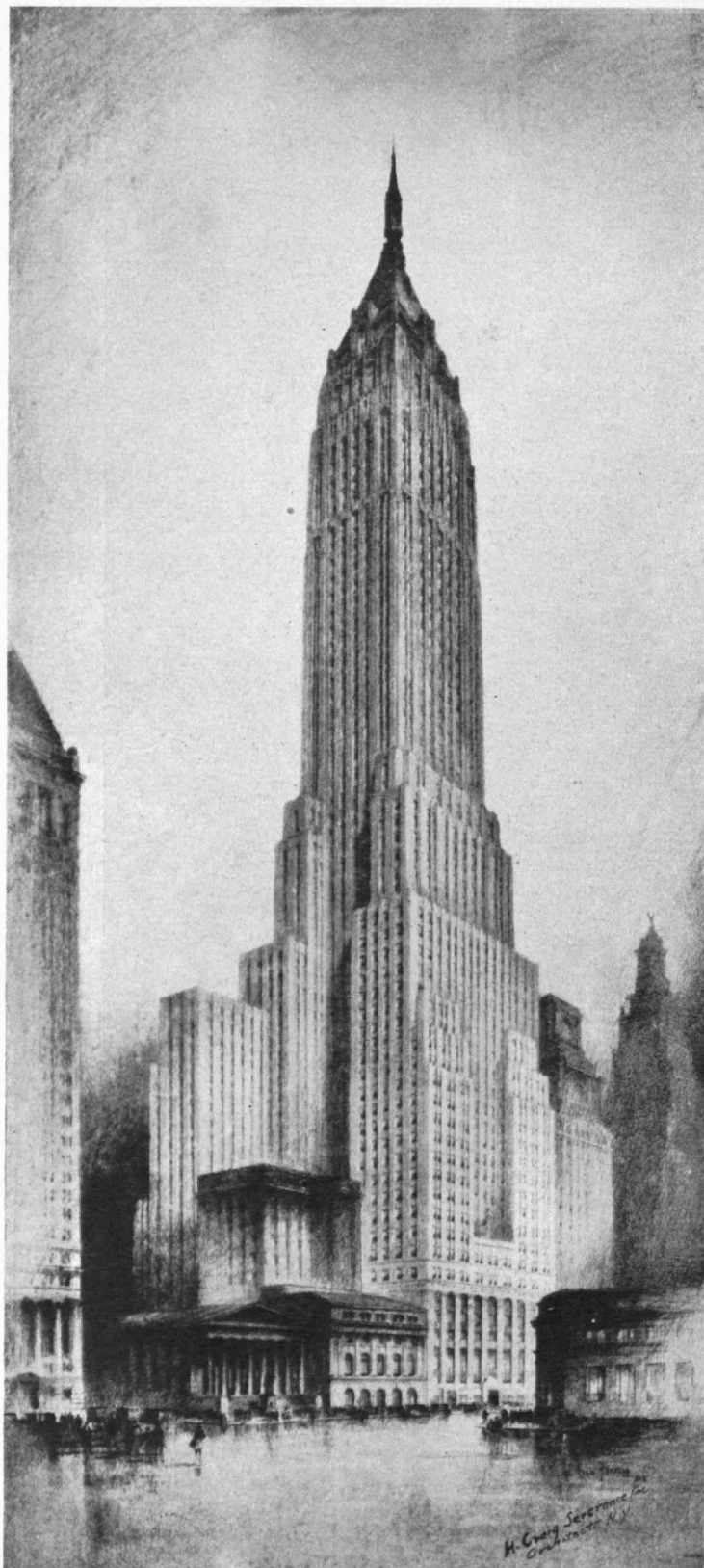
Engineers Laid Off at Forty

LAST AUGUST Stuart Chase, '10, writing in *Harper's*, called nation-wide attention to the growing unemployment caused by mills and shops discharging men upon their reaching an arbitrary age limit, often put as low as forty. Not only are men laid off early, but after attaining an age of forty or a little more they find it nearly impossible to obtain new jobs. The National Association of Manufacturers, as the result of a recent survey, found that thirty per cent of its members have maximum hiring limits. The most frequent limit for the skilled worker is fifty, and for the unskilled forty-five.

That it is a problem facing professional men, particularly engineers, as well as workmen, is indicated by its discussion at a meeting of the American Engineering Council last month. The plight of the professional engineer at the forty-year dead line "is a very real problem," declared Arthur W. Berresford, managing director of the National Electrical Manufacturer's Association and retiring President of the Council. "It seems unbelievable that a trained man of forty, an age when, as an engineer, experience has brought him to his real producing value, that such a man should find difficulty in making a new connection because of his age," Mr. Berresford said.

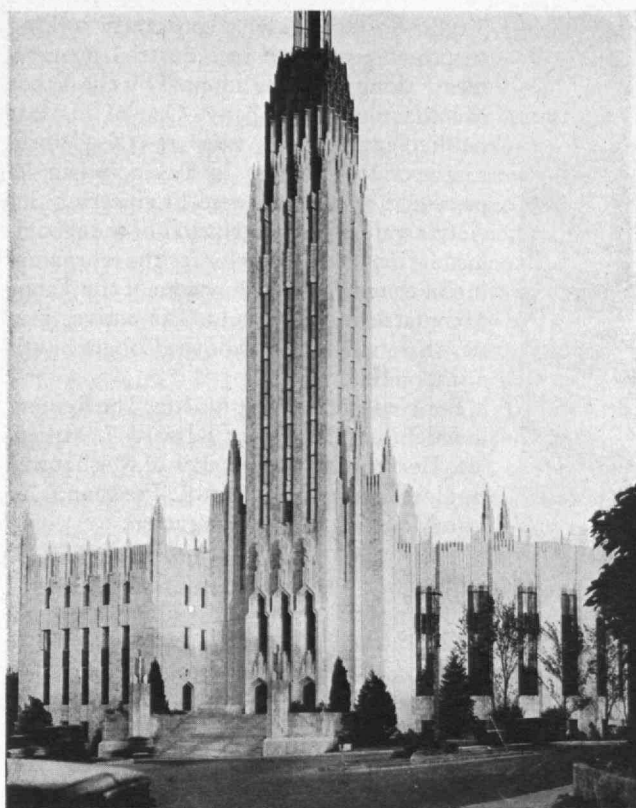
"Yet some of the larger industrial establishments are almost barred to him by reason of the restrictions of group insurance or pension provisions. The bringing of these conditions into the light by the American Engineering Council will be no small service to society."

Mr. Chase pointed out how this situation is partly brought about by the group insurance and pension plans mentioned by Mr. Berresford. The older the average age of the factory or office force, the higher the premiums under the group insurance schedules. Furthermore, if a jobless man seeks employment in an office which has a pension plan, there is a strong economic motive to discriminate



Rendering by Hugh Ferriss

BANK OF THE MANHATTAN COMPANY BUILDING AT 40 WALL STREET; SIXTY-SEVEN STORIES, 920 FEET HIGH. ARCHITECT: H. CRAIG SEVERANCE



Ewing Galloway

BOSTON AVENUE METHODIST CHURCH, TULSA, OKLAHOMA. RUSH, ENDACOTT AND RUSH WERE THE ARCHITECTS (GOFF AND ROBINSON, ASSOCIATES) OF THIS REVOLUTIONARY DESIGN

against him if he is past his prime. Being older he will be nearer the pension provision, hence the more costly to the company.

An excess of human philanthropy is thus working out in terms of human tragedy. The Review commends the Engineering Council for recognizing the problem and awaits with hope the results of its study of the economic status of the nation's engineers.

Science at the World's Fair

THE FIRST Chicago World's Fair held in 1893 profoundly affected American architecture and American science by its emphasis on progress in these two fields. *The Dynamo and the Virgin*, the famous chapter in "The Education of Henry Adams," expresses the great awakening that the technological exhibitions at the World's Fair brought to many people.

It is appropriate, therefore, that the organizers of the next World's Fair, to be held in Chicago in 1933, have decided that it should represent a century of science and that its direction should be entrusted to the country's most able scientists. The general plan adopted provides for an exposition showing the major contributions of pure and applied science in industrial development during the last 100 years. This exposition, in "dramatic philosophy and pattern," is to be divided chronologically by stages of development, by stages of manufacture, by stages of growth, or by stages of production.

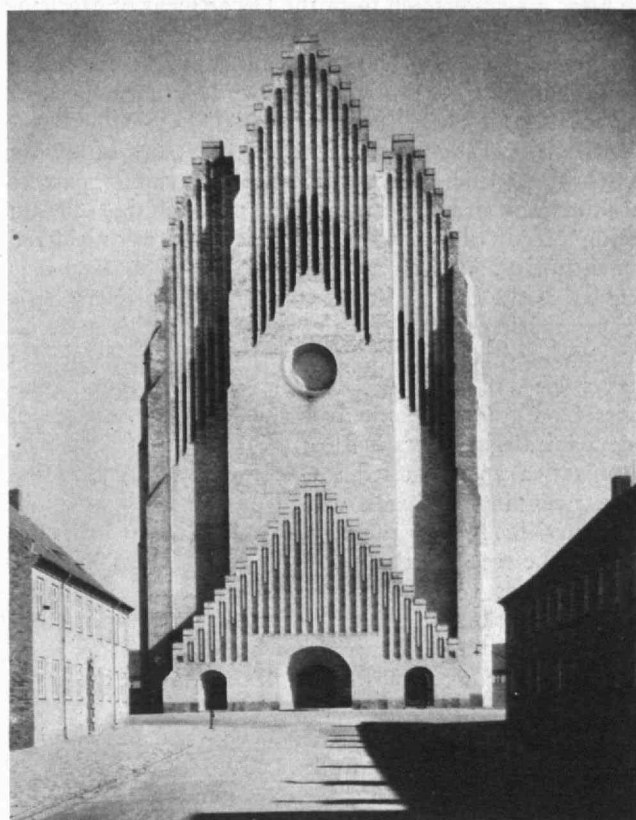
A science advisory committee of the National Research Council has undertaken the task of organizing the

scientific exhibitions and Dr. Frank B. Jewett, '03, President of the Bell Telephone Laboratories, Inc., has accepted the chairmanship of that committee. Assisting him, as Director, is Maurice Holland, '16, and as Secretary, Robert P. Shaw, '23.

Moon Strength

ASTRONOMERS have long been aware that the moon exerted a gravitational pull on the earth's crust, but they believed it resulted in too slight a movement to be measured. It is Dr. Harlan T. Stetson, Director of the Perkins Observatory of Ohio Wesleyan University, who has produced evidence to show that the change of position may amount to five or six feet, perhaps even more. These figures he advanced at the recent annual meeting of the American Astronomical Society held at Harvard. Dr. Stetson has been studying latitude variation in relation to the moon's position and he showed in his paper that a change in the position of the moon may produce a change in the direction of gravity, causing a shift in the earth's crust, and thus the variation of latitude.

In another paper delivered at the same time, Professor Knut Lundmark, Director of the Lund Observatory of Norway, said that the most far-reaching measurements into space have included mathematical projections to the distance of 150,000,000 light years. This is an appalling distance, considering that light travels at the speed of 186,000 miles per second. He also made the statement that the nebulae at a distance of 150,000,000 light years from the earth are by no means the farthest objects away.



Ewing Galloway

A CHURCH FAÇADE IN COPENHAGEN WHICH SIMULATES A HUGE PIPE ORGAN. ARCHITECT: P. V. JENSEN



W. SPENCER HUTCHINSON, '92, HEAD OF THE INSTITUTE'S DEPARTMENT OF MINING AND METALLURGY SNAPPED THIS 40,000-TON BLAST PREPARED BY THE CHILE COPPER MINE AT CHUQUICAMATA

Wilfred Lewis: 1854-1929

THE SUDDEN DEATH at sea of Wilfred Lewis, '75, while on a trip around the world, following his attendance at the World Engineering Congress, comes as a shock. On December 29, he was stricken with apoplexy on the S. S. *President Wilson*, not far from Egypt, and he was buried at sea.

After his graduation from the Department of Mechanical Engineering at the Institute, he went to work for William Sellars and Company of Philadelphia, beginning as mechanic and rapidly filling the intervening steps until he became one of its directors. In 1900 he became President of the Tabor Manufacturing Company, allowing much of his time to go to invention. Over fifty patents are the result of his researches, the most notable of them being a study of gear teeth, on which he was considered an authority. As early as 1892 he had developed what is known as the Lewis formula, which is the primary basis for computing the strength of gear teeth. This material he presented to the Franklin Institute in the form of a paper. He was made chairman of a special research committee on gears, appointed by the American Society of Mechanical Engineers in 1922, for the use of which he designed a special testing machine to determine the actual running or dynamic load on the teeth of gears. This machine he later presented as a loan to the Institute. In 1927 he received the A.S.M.E. Gold Medal "for his contributions to the design and construction of gear teeth," and the Longstreth Medal of the Franklin Institute for perfecting a shaking machine for molds.

Mr. Lewis took great interest in the work of the Institute's Department of Mechanical Engineering and his friendship with the late Professor Gaetano Lanza, who guided the Department from 1871 to 1911, was based on a desire to serve by giving of his time and money.

The third great interest of his life was the promotion of the Taylor system of shop management, expounded by his friend, the late Frederick Taylor. As President of the

Taylor Society, he was constantly seeking to promote research in industrial management, along the lines adopted by the Tabor Manufacturing Company. One of his last public appearances was at the World Engineering Congress in Tokio, when he presented to the Japanese Engineering Society a valuable transcription of the recommendations of Mr. Taylor for the reorganizing of the management system of the Tabor Manufacturing Company. His active, joyous share in the events of the Congress will not soon be forgotten.

For these facts about his life, The Review is indebted to Professor Edward F. Miller, '86, Head of the Department of Mechanical Engineering, and to John R. Freeman, '76, Life Member of the Corporation.

Counting Noses

SOME three thousand years ago King David sent his minions forth to take what is believed to be the first authentic census, a task which sought to number the people of Israel and Judah. For nine months and twenty days those early census takers knocked at doors and tugged at tent flaps, and finally reported they had counted 1,300,000 "valiant men" of the sword. All of which indicates that what King David really wanted to know was how many fighting men he could count on for his next war.

Next April 100,000 men and women will go into action at the call for the Fifteenth National Census of the United States. The first census, taken in 1790, required thirteen months and the population reported was less than 4,000,000 souls. Workers in the forthcoming census must complete their national stock taking within thirty days. In that short space of time they must secure comprehensive information about the existence and pursuits of some 120,000,000 citizens, including their sex, age, nativity, occupation, and the value of their homes.

That, however, is but the hearthstone aspect of the undertaking, for in the various branches of the Census it will be necessary to ask some 20,000 questions calculated to throw light on almost every subject from the price of prunes to the distribution of perambulators. Meantime some 40,000,000 printed copies of schedules are being prepared for the army of enumerators.

With the growing complexity of our national economic life it has become necessary to measure it in one dimension after another, and in the forthcoming census the survey will, for the first time, take into consideration the problem of distribution as a corollary to the familiar question of production. To the enumeration of population, farms, and factories, there will be added an enumeration of the outlets through which the products of industry move into the fields of consumption. This information will include data from every store and wholesale dealer regarding sales, inventory, number of employees, salaries, rent, and other expenses.

To accomplish their part of the great task, census enumerators must gather information from every city and hamlet, 6,000,000 farms, 14,000 mines and quarries,

100,000 irrigation and drainage projects, nearly 200,000 factories, 2,000,000 stores, and some 30,000,000 households.

The population of the continental United States is now increasing at the rate of about 1,300,000 persons per year, or approximately one person every twenty-three seconds. The total increase is made up of the annual excess of births over deaths, which amounts to 1,150,000, and the excess of immigration over emigration, which amounts to an additional 240,000 per year. This year the population will be more than thirty times as great as it was in 1790, and nearly twice what it was in 1890, only forty years ago.

The Census of 1930 recalls the part that General Francis Amasa Walker, third President of Technology, played in the Censuses of 1870 and 1880, which he directed. Although General Walker was but twenty-nine years old when he was appointed Superintendent of Census in 1869, he carried out the task with a skill and wisdom worthy of a man much older in experience. Hampered by a defective law and handicapped by the doubtful value of the information gathered by a horde of workers who seized upon the census as a means of collecting debts of political patronage, General Walker carried his work to a conclusion. Much of the information gathered he frankly and courageously repudiated as false and misleading. Aside from the errors to which General Walker directed attention, the work was the finest of its kind. The form in which the statistics were presented, and the excellent printing and cartography brought world-wide admiration. With the approach of the decennial census of 1880, which was afterwards referred to as the "Jumbo of Censuses," General Walker was recalled to Washington to undertake the task again. In 1881 he accepted the Presidency of the Institute.

The Pulp Rush

IN THE DYING DAYS of Andrew Johnson's administration, his Secretary of State, William H. Seward, concluded the purchase of Alaska from the Czar of Russia. Formal transfer was at Sitka, October 18, 1867, the consideration being \$7,200,000. Neither Johnson nor Seward lived to see their faith in the "land of the polar bear and gold pan" vindicated. Yet it turned out to be a productive treasury, yielding, so far, over ninety-five times its purchase price in fish, fourteen times in furs, and eighty-one times in minerals, of which fifty times have been in gold alone. But even now, pulp-wood, the fourth great natural resource of "Seward's Ice-Box," remains almost untapped. Conservative estimates of the United States Forest Service place the total volume of virgin timber in southeastern Alaska as sufficient for the production of 1,000,000 tons of newsprint annually, without depleting the wood supply.

To make this resource available the Forest Service has awarded two leaseholds, and construction on paper-making plants at Juneau and Ketchikan, each with a daily capacity of 500 tons, is due to start this spring. Completion will take about two years. A combination said to represent the San Francisco *Chronicle* and the Los Angeles *Times* is to locate near the former metropolis, which is the capital of the Territory, and the Crown-Zellerbach group, the largest newsprint manufacturers on the Pacific Coast, near Ketchikan. Both towns are on tidewater in the "panhandle" of southeastern Alaska, Juneau being some 1,000 miles steaming northeastward from Seattle, while Ketchikan, the chief port of entry for the Territory, is about 600. Each site has abundant water power and a fair wood supply, the principal difficulty being to operate at such remote locations. Climatic conditions, however, will be much less severe than in Quebec and Ontario, the main present North American sources of newsprint. July, the warmest month in Juneau, averages about 60, and January, the coldest, averages but five degrees below freezing. During a period of thirty-three years at Juneau, only fifty-six days of zero or below were recorded.

Most of the standing timber in southeastern Alaska is in the Tongass National Forest and favorable rainfall conditions (at Ketchikan the normal annual precipitation is 162.3 inches) have minimized fire losses which, it is said, destroy in Canada an amount of wood equal to that actually cut.

Although but five per cent of the timber cut in North America and Europe goes into wood pulp, by comparison with ninety-five per cent used for timber construction of all sorts, fuel, and so on, the annual newsprint consumption of the United States (based on 1928 figures) is estimated to be 3,600,000 tons. Of this, 100,000 tons is imported from Germany, Finland, Sweden, and Norway, and 1,700,000 tons (ninety-one per cent of Canada's output) from Canada. Existing mills worked at about ninety per cent capacity during 1929 and maximum development in the eastern sections of both Canada and the United States has been reached.



CURTIS "TANAGER" PLANE, WINNER OF THE \$100,000 DANIEL GUGGENHEIM PRIZE FOR THE SAFEST AIRPLANE. SEE PAGE 197

Wide World



Departure

ANNOUNCEMENT made public early in January reveals that a long and fruitful career of service to the Institute will come to a close at the end of the present academic year with the retirement of Professor Harry W. Tyler, '84. Fifty years have lapsed since Dr. Tyler registered as a Freshman in the Course in Chemistry, at the age of seventeen. After graduation, he was an Assistant on the Institute Staff for two years, studied a year at Göttingen, took his Doctorate in Philosophy at Erlangen in 1889, meanwhile having held the grade of Instructor on the Institute Staff *in absentia*. In 1890, at the age of twenty-seven, he was made an Assistant Professor, at twenty-nine an Associate Professor, at thirty a Professor, at thirty-eight Head of the Department of Mathematics, at forty-seven Walker Professor of Mathematics.

For a period of nearly fifteen years prior to 1906, Dr. Tyler served as Secretary of the Faculty, in those days an inclusive post which, until 1902, combined the duties of Dean, Registrar — and often Medical Director — as well as those of the Secretaryship. Dr. Tyler's interest in the administrative phases of education has persisted since 1906 as is evidenced by his two years' Chairmanship of the Faculty (1913-1915) and by his Chairmanship of important Faculty Committees, notably those on Courses of Instruction and Admissions. Since its foundation in 1901, he has been active in the work of the College Entrance Examination Board, of which he is now Vice-Chairman.

Aside from his academic duties, Dr. Tyler has interested himself in the social life of the Institute and has been President of the Faculty Club practically since its foundation in 1919. Following his retirement from the Institute, Dr. Tyler expects to devote his time to furthering the interests of the American Association of University Professors, of which he is General Secretary, and as a Consultant to the Library of Congress on scientific literature. In so doing he will carry out his wish to follow the line of "maximum usefulness rather than of

least resistance" for Dr. Tyler's is not a retirement due to "impaired health."

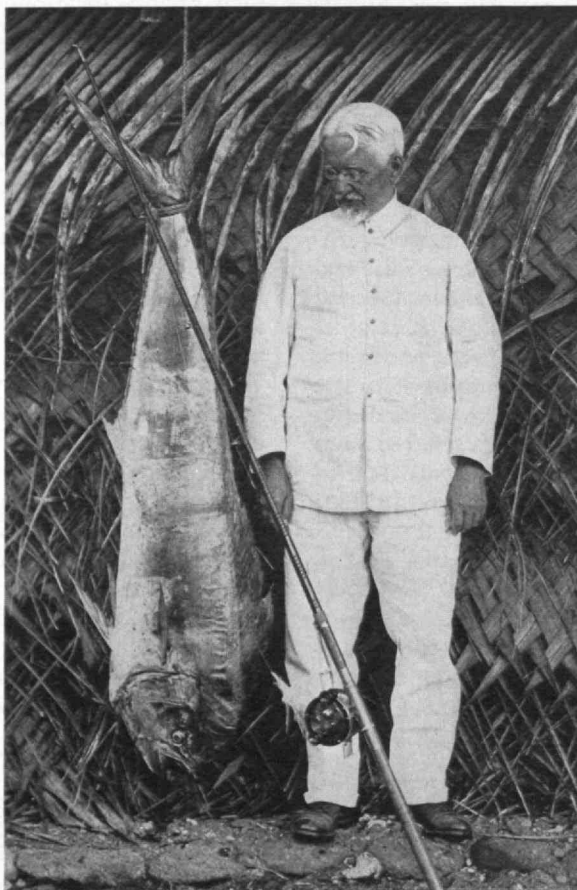
Reunion Bulletin

PLANs for the All-Technology Reunion to be held June 6 and 7 are rapidly being extended. The tentative program includes the following:

1. Registration and open house at the Institute Friday morning and afternoon, June 6.
2. General luncheon in Walker Memorial and separate fraternity luncheons in fraternity houses Friday noon, June 6.
3. President's and Corporation's reception and tea at the President's house Friday afternoon, at 4:30 P.M.
4. Separate Class Dinners Friday evening at 6:30 P.M.
5. All day outing and luncheon Saturday, June 7.
6. Closing banquet Saturday evening, June 7, including scientific demonstrations and a nationally known speaker. Dancing afterwards.

Under the leadership of Thomas C. Desmond, '09, General Chairman, and Samuel C. Prescott, '94, Vice-Chairman, other committees are being formed to supervise the different events. The Treasurer, George L. Gilmore, '90, has already secured a Guaranty Fund of nearly \$5000 and he expects that this will grow to an even larger amount.

Mr. Desmond announces the appointment of the following men as national Vice-Chairmen of the Reunion: James I. Banash, '06, Chicago; Richard H. Ranger, '11, New York; Elisha Lee, '92, Philadelphia; Baron Takuma Dan, '78, Japan; Alexander S. Garfield, '86, France; Howard M. Edmunds, '05, England; Francis J. Chesterman, '05, Pittsburgh; Burt R. Rickards, '99, Albany; W. Rawson Collier, '00, Atlanta; Joseph T. Lawton, Jr., '06, Baltimore; Dr. Oscar G. Thurlow, '04, Birmingham; Eugene L. Klocke, '21, Buffalo; George E. Merryweather, '96, Cleveland; Frank F. Bell, '10, Dallas; Frank E. Shepard, '87, Denver; William R. Kales, '92, Detroit; Hermann C. Henrici, '06, Kansas City; Don Hull McCreery, '22, Los Angeles; Armand D.



EX-PROFESSORIAL AVOCATION: DANA P. BARTLETT, '86
PROFESSOR OF MATHEMATICS, NOW RETIRED, EXHIBITS A
DOLPHIN CAUGHT IN TAHITI LAST DECEMBER

Koch, '92, Milwaukee; William H. Bovey, '94, Minneapolis; John L. Porter, '00, New Orleans; J. Lawrence Mauran, '89, St. Louis; Jonathan E. Woodbridge, '93, San Francisco; Dr. Willis R. Whitney, '90, Schenectady; Neal E. Tourtellotte, '17, Seattle; Proctor L. Dougherty, '97, Washington; Albert F. Sulzer, '01, Rochester; J. Lloyd Wayne, '96, Indianapolis; Everett R. Cowen, '07, Louisville; Edgar M. Berliner, '06, Montreal; Denton Massey, '24, Toronto; Howard S. Morse, '03, Akron; Charles G. Merrell, '88, Cincinnati; Erle F. Whitney, '07, Portland.

Annual Dinner

UNFORTUNATELY the Annual Dinner of the Alumni Association falls this year just after this issue goes to press, making it impossible to render at this time anything more than an advance notice based on the already published program and on years of experience in reporting these stately affairs.

If the forecast of the Committee on Assemblies is followed to the letter, then the following events took place on January 18 — the change of tense merely indicating that this story will be written in terms of the time that it will be read by the reader. The President of the Alumni Association, Paul W. Litchfield, '96, also President of the Goodyear Tire and Rubber Company and the Goodyear-Zeppelin Corporation, presided at the dinner in Walker Memorial and introduced first Dr. Stratton, who made his usual report on the state of the Institute, reviewing the work that has been done and the progress that has been made since the last Annual Dinner. Samuel C. Prescott, '94, followed, speaking in his capacity as Vice-Chairman of the All-Technology Reunion to be held in June. He

outlined the plans that were being formulated (see opposite page) and emphasized the dignity and importance which is to characterize this Five-Year Celebration.

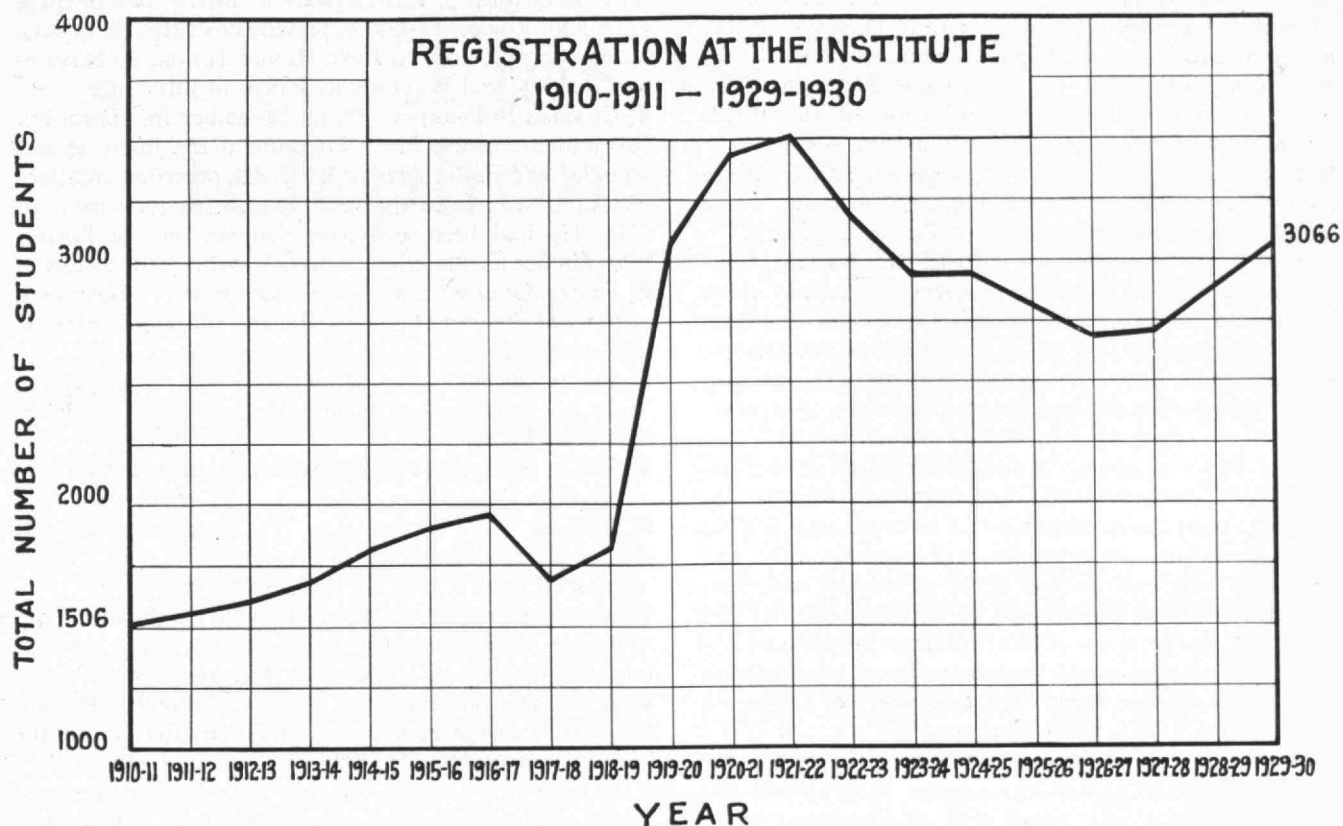
Clair E. Turner, '17, Professor of Biology and Public Health, and a pioneer in public school health work, spoke on the advantages and achievements of organized child health study, and supplemented his talk with the showing of a film produced by the Department of Biology and Public Health at the Institute in coöperation with the Eastman Kodak Company. This film, one of many, was designed for use in teaching physiology in public schools. These films are remarkable for their advanced technique and for the clarity with which they present their subject matter. The final speaker of the evening, Robert L. O'Brien, former editor of the *Boston Herald* spoke on "What 1930 Means to Us."

Tuition Increase

IN THE FALL of 1931 tuition at the Institute will be increased from \$400 to \$500 a year in accordance with a vote of the Corporation on Wednesday, January 8. This is the second time within three years that the tuition rate has been increased; in March, 1927, the Corporation voted an increase from \$300 to \$400 a year.

The increasing per capita cost of education and the need of higher salaries for the instructing staff prompted this latest change. Engineering education requires a greater expenditure than liberal arts training; last year the Institute expended more than \$850 per student.

In 1881, when Technology was twenty-six years old, the tuition fee was \$200 and it remained at that figure until 1906 when it was made \$250. In 1919 the amount was raised to \$300.





Presided

DR. GEORGE K. BURGESS, '96, Director of the Bureau of Standards and Chairman of the National Research Council, over two sections of the World Engineering Congress in Tokio. He was the only American to receive Honorary Membership in the Society of Mechanical Engineers of Japan, and he made the address on the conferring of the Holley Medal to Baron Shiba.

Consulted

☞ **JEROME C. HUNSAKER**, '12, Vice-President of the Goodyear-Zeppelin Corporation, pronounced feasible facilities for mooring airships on top of the new Empire State Building which is sponsored by former-Governor Alfred E. Smith. He estimated that provision could be made for mooring a thousand-foot airship above the building.

Appointed

☞ **JAMES F. NORRIS** to be a director of the American Chemical Society for 1930 to 1932.

☞ **EDWARD R. SCHWARTZ**, '23, to be Assistant Professor of Textile Technology at the Institute.

☞ **ELMER W. BRUGMANN**, '24, to be Assistant Professor of Chemical Engineering and Assistant Director of the Research Laboratory of Applied Chemistry.

☞ **LEROY F. MAREK**, '28, to be Assistant Professor of Chemical Engineering and Assistant Director of the Research Laboratory of Applied Chemistry.

☞ **FRANK J. OSBORNE**, '12, to be a member of the Committee on Public Health Organization of the White House Conference on Child Health and Protection.

☞ **ROBERT S. BURNAP**, '16, lamp engineer at the Edison Lamp Works of the General Electric Company, to be Secretary of the Society of Motion Picture Engineers.

☞ **IRVING B. MCDANIEL**, '17, to be aide to Governor-General Dwight F. Davis, at present assigned to Cavite, P. I. From the Philippine Islands he will go to Japan, China, and Java, and then home through Suez and Europe.

☞ **CHARLES H. REED**, '20, to be Chairman of the Lacquer Institute, which comprises the manufacturers of seventy-five per cent of all the lacquer sold in this country.

☞ **C. LAUREN MALTBY**, '22, to be Secretary of the National Air Travelers Association, and also its statistician. The purpose of the Association will be to act as a clearing house for aviation information and to advance the personal safety and convenience of the air traveler and pilot.

☞ **STANLEY G. H. FITCH**, '00, of Patterson, Teele, and Dennis, Vice-President of the American Institute of Accountants, was an official representative of the Institute at the Fiftieth Anniversary of the Society of Chartered Accountants, held in Quebec.

☞ **ARCHIBALD L. PARSONS**, '97, to be Chief of the Bureau of Yards and Docks of the Navy, with the rank of Rear-Admiral, Corps of Civil Engineers, U. S.

Navy, for a term of four years, beginning December 21, 1929. The appointment automatically makes Parsons the Chief of Civil Engineers, U. S. Navy during his incumbency.

☞ **GEORGE A. HOOL**, '05 to be Vice-President of the John W. Ferguson Company, engineers and builders in New York and Paterson, N. J.

Deaths

Since the last issue, reports have come to The Review of the decease of the following:

☞ **A. WHITING WATRISS**, '75, on October 22. He was a commercial photographer with the Decorators Supply Company in Chicago.

☞ **WILFRED LEWIS**, '75, suddenly at sea on December 29, as he was taking a trip around the world after the World Engineering Congress in Tokio. He was President of the Tabor Manufacturing Company and he had received several important medals for his work in construction and perfection of appliances connected with manufacturing. See page 203.

☞ **EDWIN H. LINCOLN**, '75, on December 8. He was a member of the firm of Aspinwall and Lincoln in Boston.

The Secretary of '77 has been zealous in ferreting out old records and reports the following deaths, not previously reported: **DAVID H. AUSTIN**, on May 27, 1877; **EDWARD E. PIPER**, on June 23, 1925; **ARTHUR J. GOODMAN**, on October 3, 1926; **LYMAN W. SMITH**, two or three years ago; **ROBERT D. GEER**, previous to 1916; **CHANDLER MACOMBER**, previous to 1880; **HENRY TUDOR**, on November 26, 1925; and **WALLACE R. POND**, in July, 1926.

☞ **CHARLES B. PERKINS**, '87, on December 16. He took a postgraduate course in Architecture at the Institute and attended the Beaux Arts in Paris. He practised architecture in Boston from the late '90's to his retirement in 1914. He had been an active member on the Boston Schoolhouse Commission. A longer notice will follow.

☞ **FRANK GOODWILLIE**, '89, on October 17. He was a member of the firm of Goodwillie and Moran, architects, in New York.

☞ **SAMUEL B. SHELDON**, '89, on November 22 in Duluth, Minn. He was President of the Minnesota Steel Company, following Judge Gary.

☞ **FAY B. KENDALL**, '93, on March 23. He was formerly a lawyer in Boston.

☞ **FRANCIS A. J. FITZGERALD**, '95, on October 28. He was an electrical engineer in Niagara Falls, and a loyal member of the Technology Club of that city.

☞ **GENERAL DWIGHT E. AULTMAN**, '95, on December 12. Although affiliated with the Class of '95, many '96 men knew of him and his association with the Army.

☞ **WILLIAM LOHMEYER, JR.**, '17, on August 26. For disability received in action, he was retired as a Captain in the Army on May 25, 1920.

☞ **ALBERT M. YOUNG**, '21. No details have been received of his recent death as reported in the '20 Notes.



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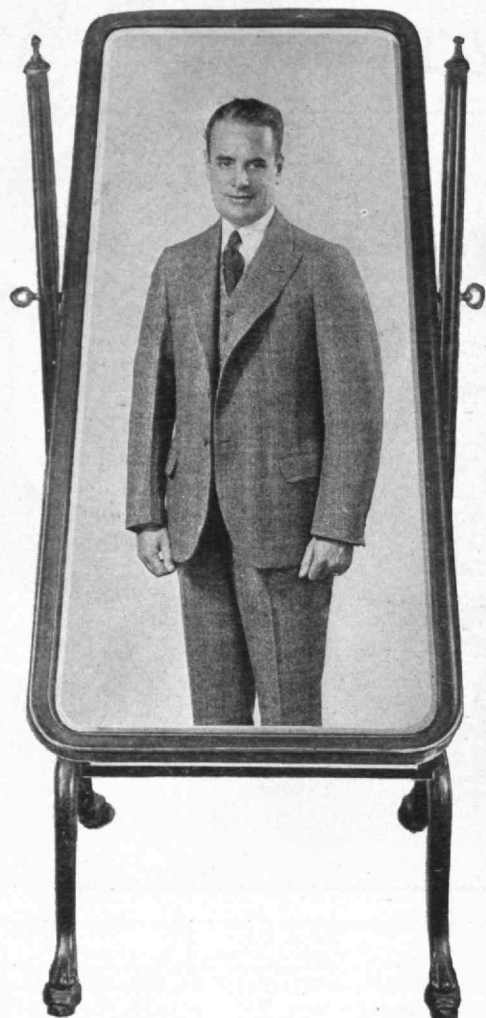
construction. At the same time, better records were made for speed and accuracy in service.

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This is part of the telephone ideal that anyone, anywhere, shall be able to talk quickly and at reasonable cost with anyone, anywhere else. There is no standing still in the Bell System.





ADVENTURES IN RADIATION

(Concluded from page 188)

consisting of numerous batteries, meters, vacuum tubes, and optical instruments, is enough to warm the heart of almost any man having even the slightest propensity for things scientific.

Many other experiments, past and present, could be added to the list, but a sufficient number have already been described to indicate the nature of the work which the students are trained to do. The field is constantly expanding so that within a short time the Radiation Measurements Laboratory will again have outgrown its quarters. Another moving day is anticipated.

BUILDING A GREAT CITY

(Continued from page 192)

The Public Garden, twenty-four acres in extent, lying immediately to the west of Boston Common was formerly a submerged area, a part of the Back Bay, the old shore line being along Charles Street which separates the Common and the Garden. The land occupied by the Garden, as well as by nearly the whole of the Back Bay district, was made by filling the bay and the mud flats, about the middle of the Nineteenth Century.

In 1875, after long agitation of the question, the State Legislature passed an act authorizing the appointment of a Board of Park Commissioners for the City of Boston with power to take lands for, and to construct, public parks. Within twenty years from the appointment of the board in 1875, Boston had acquired and constructed a comprehensive system of parks and connecting boulevards which, upon completion, were far superior to those of any other American city.

The Boston park system made such an impression upon other communities around Boston that the latter secured legislation, in 1892, under which the Governor appointed a temporary commission to serve one year to report upon the advisability of laying out ample open spaces for the use of the public of Boston and nearby communities, and to outline a comprehensive plan for laying out and maintaining such open spaces.

This Temporary Metropolitan Park Commission, in its report submitted in 1893, pointed out that the growth of rapid transit, both by steam railroads and electric railways, had made every municipality within ten miles of Boston a close suburb of that city. The city population was rapidly diffusing itself over this metropolitan area, so that the area had already become in reality one large community. South of the Charles River the City of Boston and some of the other communities were already provided with open air recreational spaces. Elsewhere, however, one found conditions to be quite different — miles of thickly settled territory with little provision for such open spaces and in many communities no lands available for recreational use. Socially this great district was one and its recreational needs should be met as a unified problem, otherwise its natural development would surely be hampered.

(Continued on page 212)

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The Rubicon



The Gallic wars over, Gaul reduced to a peaceful Roman province and his term as Proconsul about to expire, Julius Caesar had decisions to make. It was the bleak winter of 50-49 B.C. but Julius Caesar chafed in his Thirteenth Legion's camp at Ravenna, southernmost city of Cisalpine Gaul. Events at Rome disturbed him. The old triumvirate, Caesar, Pompey, Crassus, had ended with Crassus' death, and now world-conquering Pompey had Asia, Africa, Spain and Italy at his feet. Caesar, supreme only in Gaul, but counting on the devotion of his Legions, braced himself for an inevitable conflict. As *TIME*, had it been published on the Ides of January, 49 B.C., would have reported subsequent events:

... To Julius Caesar came travel-stained Tribunes Mark Antony and Quintus Cassius Longinus, bearing bad news: On January 7th, the Senate, intimidated by Pompey's partisans, had declared Caesar guilty of high treason if he did not at once resign his Proconsulship of Gaul, disband his legions. For seeking to exercise their traditional right of veto, they, Tribunes Antony and Cassius, had been hounded from Rome by Pompey's soldiery. As they blurted out their story, long-nosed Caesar listened quietly, smiled faintly. Then sharply, he issued orders to the Centurions of the Thirteenth Legion.

Soon foot soldiers in small groups set out for fateful Ariminum (30 miles away), first Roman city beyond the Gallic frontier. Caesar himself feasted and dined until mid-evening, then suddenly he left

the banquet hall, leaped to a chariot, drove speedily southward, his cavalry thundering behind.

Soon he came to the banks of the little river Rubicon, hardly more than a stream. At the ford, Gaul-Governor Caesar paused until his horsemen caught up. Here was the frontier he might not legally cross—in arms, and accompanied by his legions. Caesar knew that five thousand of his foot soldiers were already well across the Rubicon, well on their way to Ariminum, but a touch of drama was necessary to weld his cavalymen still closer to him, to nourish the fast-swelling Caesar legend. So, slowly, earnestly, he spoke: "My friends, if I pass not this river immediately, it will be for me the beginning of all misfortunes (a murmur from the ranks), and if I do pass it, I go to make a world of people miserable." (a cheer from the ranks). For an instant he hesitated, seemingly lost in thought, then suddenly drove his chariot through the shallow stream, crying in a deep voice "Let the die be cast!"...

Two hours later Caesar overtook his foot soldiers at Ariminum, and by sun-up invested the surrounding countryside. Soon fleeing peasants were carrying to Rome inspired rumors that great Caesar with *all* his Legions was coming to avenge himself on Pompeius Magnus. Rome gasped in horror, remembering all too vividly the butcheries of too-recent civil strife between Marians and Sullans....

So too, in succeeding issues, would *TIME* have reported how Caesar drove Pompey out of Rome, then, relentlessly, out of Italy; how after four years of bitter civil war throughout the Empire, Caesar returned to Rome triumphant, master of the civilized world—until assassinated six months later.

Cultivated Americans, impatient with cheap sensationalism and windy bias, turn increasingly to publications edited in the historical spirit. These publications, fair-dealing, vigorously impartial, devote themselves to the public weal in the sense that they report what they see, serve no masters, fear no groups.

TIME

The Weekly Newsmagazine

BUILDING A GREAT CITY

(Continued from page 210)

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Two solutions of this problem were possible — one, consolidation of municipalities into a single political entity; the other, the development of recreational facilities under state authority. Consolidation was not practical, as the sentiment of the communities was generally for maintaining their political independence. State action, however, was deemed to be entirely practical. The commission pointed out that, of the world's large cities, London alone presented the problem that confronted Boston and its surrounding territory.

The legislature accepted the report of the Temporary Metropolitan Park Commission as the answer to the recreational problem of the metropolitan district, and in 1893 it passed the act creating the Metropolitan Park System and providing for the appointment of a permanent Metropolitan Park Commission.

In acquiring lands for park purposes for the Metropolitan District it was the intention to follow the practice already adopted by the City of Boston for its city park system, that is to aim to secure open spaces at once before communities became more thickly settled and to leave these open spaces more or less in their natural state until such time, if ever, as artificial development seemed desirable.

THE Metropolitan Sewerage, Water and Park districts are the three permanent and legally established districts created by legislative enactment, for which public improvements have been constructed for the common benefit of the communities concerned. Other metropolitan activities have been, and are being, carried out under authority of state legislation.

The improvement of the Charles River Basin, formerly a tidal estuary with offensive mud flats, carried out about twenty-five years ago by a special commission under authority of state legislation, is the chief example of a special metropolitan constructional activity.

In the matter of rapid transit in the territory in and around Boston, the State has exercised authority of metropolitan character. This territory is served by two transit systems, the Boston Elevated Railway Company and the Eastern Massachusetts Street Railway Company. Prior to the World War these two companies had found it increasingly difficult to make both ends meet under the fare restrictions imposed. When the War came, bringing in its train the rapid increase in the general scale of prices, the situation became increasingly acute and, by 1918, both companies were faced with the alternative of securing increased revenue or going into bankruptcy. Adequate transportation was a matter of deep concern to the communities depending upon these two companies for service. Public ownership was not favored. Instead of public ownership, the Legislature of 1918 passed two Public Control Acts, one applicable to the Boston Elevated system, the other to the Eastern Massachusetts. For each there was created a Board of Trustees, appointed by the Governor, which took over the control and the operation of the system as a matter of public necessity. Former fare restrictions were abolished. Each Board of Trustees was directed to operate its system at cost; and was given power to establish rates of fare sufficient to pay the expense of operation *(Continued on page 214)*

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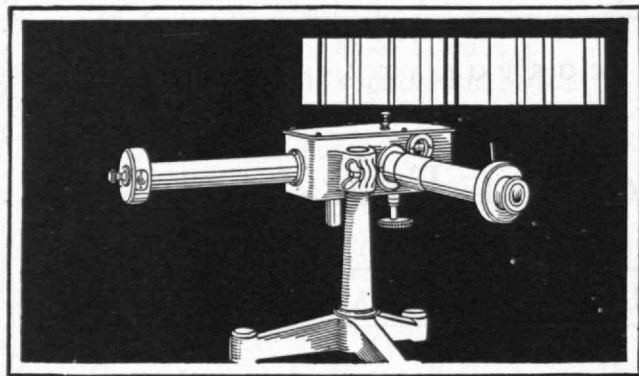


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BUILDING A GREAT CITY

(Continued from page 212)

and upkeep, to meet interest and retirement charges of bonds and preferred stock, and also to pay dividends on common stock of the company at rates fixed by the Public Control Act. Thus these two transportation systems were taken out of the hands of the stockholders and put under the control of public officials where the control remains today, although the question is now under discussion as to what the future arrangement shall be. Thus far, public control has been of distinct benefit to the metropolitan district and has been the means of saving the situation which had become most critical in 1918.

The Metropolitan Planning Division was established by legislation passed in 1923. Although a division within the Metropolitan District Commission, it is broadly representative and, of the seven commissioners in charge, three are appointed at large by the Governor and the others are official representatives of the State Departments of Public Works and of Public Utilities, the Metropolitan District Commission and the Transit Department of the City of Boston. The Metropolitan Planning Division is charged primarily with the duty of investigating and making recommendations as to transportation service and facilities within the metropolitan district. In no sense does it supplant local planning agencies, nor does it deal with projects exclusively local in character; it aims to secure coördination upon broader matters affecting the district as a whole.

The United States Government was the first to give official recognition to the metropolitan character of the district in and around Boston. Even before the State established the first metropolitan district (the Metropolitan Sewerage District, established in 1889) the United States Post Office Department had created a metropolitan postal district by consolidation of the post offices of surrounding cities and towns with that of the City of Boston itself. Boston has the distinction of having had the first post office in the American colonies. This was established by order of the General Court on November 5, 1639; its location being indicated by a tablet now in the doorway of the Boston *Globe* Building, 244 Washington Street. Today, the Boston Postal District is the largest in area of any postal district in the United States; the present postmaster is Col. Charles R. Gow, Professor of Humanics at the Institute.

The State of Massachusetts has loaned its credit in the first instance and has issued the bonds necessary to meet the cost of metropolitan developments. In no case, however, have these developments been treated as state-wide undertakings, nor has the work of construction been carried out by established state departments; instead, the State has created a special agency to handle each separate metropolitan problem. Altogether, the State has issued considerably more than \$200,000,000 of bonds for metropolitan improvements. The cost of maintaining and operating these improvements is met by legislative appropriation from the State Treasury. By these transactions, the State is not out of pocket, however, as interest and retirement of bonds and the cost of maintenance and operation are reimbursed to the State by direct tax on the municipalities *(Concluded on page 216)*

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BUILDING A GREAT CITY

(Concluded from page 214)

of each of the several metropolitan districts. The method of apportionment of this tax is variable but is usually based either on the population or on the assessed valuation, or both, of the communities benefited.

MODERNISTIC ARCHITECTURE

(Concluded from page 196)

When we think of *modern* architecture, we picture skyscrapers, office buildings, banks, theatres, which have departed somewhat from the old traditional elements of design on account of twentieth century requirements. The modernist's conception of modern architecture is the cubistic, box-like, and, in general, ugly buildings of which there are so many examples in modern Europe. The more gradual diverters from the old appear to be following the more logical path. De Klerk in Holland is truly modern (see page 196) yet his designs have not the cold austerity, the bold falsity, to cast aside entirely the value of pleasing proportion, of adequate consideration to the need of beauty fundamentals. That it is not necessary to go to extremes, and yet be modern, is shown by Ralph T. Walker, '11, and a few others in this country who have made some unusually fine designs in the modern spirit.

Contrive to retain a happy relation between the whole and all of its parts. Exclude none of the virtues of beauty. Be rational, be logical. Do not be extreme. Proceed cautiously, sure-footedly.

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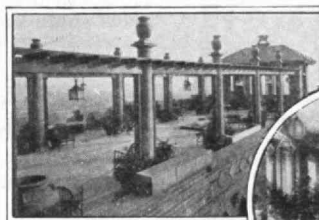


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SUPPLEMENT

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An All-Technology Reunion is to be held in Boston and Cambridge on Friday, June 6, and Saturday, June 7.

Coming as it will five years after the great Reunion of 1925, and falling during the period of Boston's Tercentenary Celebration, it will afford an unequalled opportunity for Alumni to visit the Institute and observe how greatly it has flourished since last they were here, and to be in Boston during the most festive and elaborate celebration the city has staged during its 300 years of existence.

Thousands of Technology Alumni will be in attendance. For their reception prominent graduates from all parts of the country are now working out a program of scientific demonstrations and typically Technology entertainments that will make it, not a local get-together, but a great reunion of national and international appeal.

We urge you to plan to be in attendance.

Thomas C. Desmond '09

Chairman of the Reunion Committee

Samuel C. Prescott '94

Vice-Chairman

NEWS FROM THE CLASSES AND CLUBS

1875

Should anyone chance to ask, the climate on the south shore of Lake Erie is more strenuous than in the Boston region, in particular as to humidity. I was in Cleveland the last of November for four weeks. I had rather expected to spend most of the winter in Cleveland, but the humidity knockout has changed my mind. Wheresoever I may drop anchor in winter, it will not be in northern Ohio.

Wilfred Lewis died of apoplexy on the steamship *President Wilson* on December 29, near Egypt, on a tour of the world with Mrs. Lewis. He represented the Taylor Society at the World Engineering Congress at Tokio and was to have been home in May. In his passing the Institute has lost a distinguished Alumnus and the Class a beloved member.

Prentiss and Hibbard are the only men who have written their Class Secretary since the last '75 Notes appeared in The Review. They were both well as may be, in cheery condition, glad to report. Prentiss and Mrs. Prentiss are in Florida, not to return to Holyoke until April. Hibbard should have a paragraph alone.

The George Lawley Corporation at Neponset, of which Hibbard is President, has the contract to build a steel motor yacht for Edsel Ford. In December it was on the way to New York to have its upholstery put in. Seemingly, due to the carelessness on the part of the captain, she was run on Hen and Chickens Ledge in Buzzards Bay, on a clear night, and was thought to be a total loss. The news was published in all the papers and widely commented on. Hibbard writes: "I now hear that a wrecking company is raising her and she will be towed back to us for repairs." And he ends his letter, "I expect we will suffer from the stock market crash but are busy enough now with old contracts. I cannot see that business generally will be harmed by this readjustment in values. I hope not at any rate."

From Honolulu came a Christmas letter from Bishop and Mrs. Restarick, telling, "We did not know that your classmate, Goodale, was such a churchman. His splendid gift to the church in Butte is widely appreciated and we have learned how greatly he is missed in Montana. The death of his brother so soon after his passing is a sad loss to Hawaii."

My last letter to Webster was acknowledged by Mrs. Webster with the sorrowful word that, "William would not know you were you to come to the house. He has not been himself now for more than a year and there is no hope for his recovery, though physically he is quite well." Here is another surprise to me, for on my

visits to Philadelphia he has put me up at the Art Club and I was confident that his hearty cordiality would outlive me.

Joggers are being received relative to the "Register of Former Students," which is published once in five years, that the next volume will appear about April. Any information on this head should be sent in without delay. According to the existing records, there are fifty-two who were associated with the Class of '75 still living, but my endeavors have been able to find but fourteen. This is a reminder that our ancients, aforetime "rough neck boys," as Wilfred Lewis delighted to tell, are dropping out along the way. So wags the world. There are four deaths chronicled this month.

A. Whiting Watriss died in Chicago on October 22. He was with the Class the first year and took slight interest in the Institute. Soon after I became Secretary, I succeeded in getting a reply from him to one of several appeals, in which he remembered me as "a fun-loving chap." He failed to write again.

Frank H. Pierce died at his home in New Haven on November 21 last. He was seventy-eight in September. Although he was with '75 but one year, he promptly replied to all letters and desired to be informed of Technology doings. On learning that I had assumed the office of Secretary, he wrote me that I would find it difficult to make good the loss of Ham-matt, "the best of Class Secretaries." We had several pleasant get-togethers in New Haven. In Seattle last summer, I received a letter from him which had been forwarded from several places, in which he wrote, "I think that I haven't told you of my retirement from the Union and New Haven Trust Company in March, with a pension larger than I had expected, especially as they were not bound to allow me anything. Twenty years is a long time to look back upon. When I entered I was told that the job was good for two weeks."

Edwin Howland Lincoln died at his home in Brookline on December 8. Had he lived another month he would have been seventy-five. He was long a faithful member of the Class Executive Committee and a constant attendant at meetings. By an oversight in understanding the date, he missed out on the 1928 Class Dinner much to his annoy, and last year he was ill, unable to be present. We shall miss him. — HENRY L. J. WARREN, *Secretary*, 1019 Beacon Street, Brookline, Mass.

1877

Although somewhat difficult, it has been interesting to search for information of the Class of '77 listed by Dick Hale as "members whose addresses are unknown." To these have been added the names of Robert D. Geer and Frederick R.

Newbold. In the December Technology Review was a full account of Arthur W. Temple, by his son, Raymond B. Temple, a graduate of Technology in the Class of '09. From the vital records in the state archives information was obtained of two of the missing men. David H. Austin was at the Institute one year and Edward E. Piper two years. The records state that David H. Austin died at Lynn, Mass., on May 27, 1877, aged twenty-one years, eleven months and nineteen days. He was listed as a student. Edward E. Piper died at Wellesley Park on June 23, 1925, aged seventy years, six months and seven days. His occupation was that of a carpenter.

From Collinsville, Conn., the town clerk sent the information that A. J. Goodman died in Cleveland, Ohio, leaving a widow. The city clerk of Cleveland, Ohio, gave the information that Arthur Jules Goodman died at 2425 Euclid Avenue, on October 3, 1926, aged sixty-eight years. Lyman W. Smith from Norwood, Mass., was at the Institute one year. The town clerk of Norwood stated that he died two or three years ago, exact place and date not known. Robert D. Geer from Springfield, Mass., stayed one year at the Institute and went into business in New York City and died there shortly previous to 1916. C. A. Clark, a relative and our Class President, gave this information. Chandler Macomber was at the Institute one year and died previous to 1880. This information came from Alexander Macomber, a family connection.

A letter written at a venture to Henry D. Tudor brought the information that Henry Tudor died at Raymond, N. H., on November 26, 1925. He was born on January 21, 1854. The Registrar of Technology furnished this information. Wallace R. Pond died in July, 1926. Austin died just before his Class graduated, Macomber a little later. Temple, Smith, Geer, Goodman, Piper, Tudor, and Pond lived until a few years ago but did not get in touch with the Class Secretary.

This is but a report of progress. Later we hope to hear about some of the fifteen men unaccounted for. — BELVIN T. WILLISTON, *Secretary*, 3 Monmouth Street, Somerville, Mass.

1881

The next Technology Reunion under the five year plan will be held in June, 1930. This will be celebrated as our Fiftieth Anniversary. You fellows who were at the 1916 Reunion will remember the extraordinary percentage of our Class present and it was the united opinion of every one present that he would be on hand, if it were a possible thing, in 1930. In 1916 we had twenty-one graduates and fifty non-graduates living. At the present writing we have thirteen graduates and thirty-seven non-graduates.

1881 Continued

The alumni gathering will start on Friday, June 6, which will be Registration Day, with a reception in the afternoon. The formal reunion dinner will be held on Saturday, June 7, and there will be many special features in connection therewith. Probably our own reunion dinner will be arranged for Sunday evening, June 8, or, if preferred, Friday, June 6, but I wish particularly to bring the above dates to your attention now, so that you will make up your plans at once to surely attend. I solicit a letter from you as to whether you will be present, and which date you would prefer for our own Reunion Dinner. — FRANK H. BRIGGS, *Secretary*, 390 Commonwealth Avenue, Boston, Mass.

1887

In the last Class Notes the Secretary reported the passing of five of our members, with the statement that in a later letter he would furnish a more extended account of their life work, and at this writing there is available biographical data covering four of the five, which is herewith submitted.

Alexander Hamilton Twombly, who passed away June 26 at his residence, 3 Fernwood Road, Summit, N. J., after a long illness, was a son of Dr. Alexander S. Twombly, a noted Boston clergyman, and Abigail Bancroft Twombly, of Mayflower descent. He was a graduate of the Boston Latin School and of Technology, where he stood high in engineering courses and where he was also a prominent athlete. He subsequently was connected with S. D. Warren and Company, in charge of their water power at Gardiner, Maine, and also for many years acted as superintendent of their Yarmouth pulp mills, in Yarmouth, Maine. While residing in Yarmouth he was a trustee of North Yarmouth Academy and a member of the board of trustees of the public library. On going later to New York City, Mr. Twombly was connected with the engineering firm of Westinghouse, Church, Kerr and Company. Subsequently, he constructed the sewer systems of Boca Grande, and Tampa, Fla., and later built, for the government, Camp Shelby in Hattiesburg, Miss., completing the camp within the time prescribed and for the consideration fixed in the government contract. After the War, Mr. Twombly was employed as engineer-in-chief in the erection of the plant of the St. Louis Coke and Chemical Company of St. Louis, Mo., of which company he became President. For upward of twenty-five years his residence has been in Summit, N. J. Mr. Twombly is survived by his wife, Sophie D. Twombly (née Hitchcock), his daughter Ellen, now Mrs. Allan Hay, and his son, Alexander H. Twombly, Jr.

Charles Porter Smith, who died at his home in Methuen on July 14, was born in Cambridge and for a number of years after his graduation in 1887 was connected with the Westinghouse Electric and Manufacturing Company in Pittsburgh in an executive capacity, and also with the General Electric Company in Lynn, and the Pacific Mills in Lawrence. He is

survived by his wife, Mrs. Jessie McEwen Smith, and three children, Bertha C., Lawrence C., and Donald McEwen Smith; a sister, Mrs. Maurice W. Mather of Cambridge; and a brother, Robert L. Smith of East Orange, N. J.

Dr. James Thornton Greeley who died in Nashua, N. H., on August 29, was a son of Dr. James B. Greeley, a noted surgeon in Thornton's Ferry and in Nashua during the later years of his life, as was an uncle, Dr. George P. Greeley, who conducted a flourishing practice in Nashua for many years. He was born in Thornton's Ferry, July 19, 1862, and received his early education in the public schools there and in Nashua. He studied two years at Dartmouth College, then entered the Institute where he was graduated after a four year course. He then entered the University of Maryland, where he studied medicine, as had been the custom of the male members of the family for years, including an ancestor, Matthew Thornton, a signer of the Declaration of Independence from New Hampshire. Dr. Greeley was a keen student of medicine and surgery, and studied in Paris and other European cities. He was a student of literature and a fluent speaker of French and other foreign languages. He distinguished himself in the service of the United States Army in both the Spanish-American and World Wars; in the former as a surgeon with rank of major in a New Hampshire regiment, and in the latter in charge of the Red Cross Division in the Near East, with his headquarters near the City of Palestine. Many important medical inventions are attributed to Dr. Greeley, one of the most important being the so-called "Greeley Unit," which was a combination of hypodermic needle and carrier, enabling doctors and aids to administer hypodermic medication instantaneously. Medical departments of the French, Italian, British, and American armies used this unit extensively.

Dr. Greeley was serving his second term as President of the Nashua Country Club. His affiliations included membership in the America Medical Society, New Hampshire Medical Society, a Fellow of the College of Surgeons, Hillsborough County Medical Society, New Hampshire Surgical Club, and Nashua Medical Society. He was on the staff of the Memorial and St. Joseph's Hospitals in Nashua, a member of the Board of Trustees of the Nashua Memorial Hospital and historian for many years of the Nashua Medical Society.

Walter Clark Fish, who died at his home on Bay State Road, Boston, on September 8, was born at Taunton, Mass., on August 25, 1864. He studied two years at Harvard, and then entered the Institute from which he was graduated in 1887 and subsequently received a degree from Harvard. He went to Lynn in 1891 as assistant to the general manager of the Lynn branch of the General Electric Company, and took charge of the plant four years later. The rapid growth of the Lynn works is said to have been due mainly to his efforts and foresight. He

was a tireless worker, and surrounded himself with men who labored with him long hours in order that the operation of the Lynn works should be successful. The organization grew from about 1,500, when he took charge, to upwards of 15,000 when he resigned in 1920 to accept the position of manufacturing engineer with the International Electric Company, with headquarters in Paris. He returned to this country in 1922, after starting a number of large and important projects in France and Switzerland, and in 1922 was made consulting engineer of the General Electric Company with headquarters at the Schenectady plant, retiring in 1924. He was a member of the American Institute of Electrical Engineers, the Boston Engineers Club, the Algonquin Club, and many other clubs. During the administration of Governor Foss, Mr. Fish was named a member of the board of directors of the Massachusetts Employers' Association. — EDWARD G. THOMAS, *Secretary*, Toledo Scale Company, Toledo, Ohio. NATHANIEL T. VERY, *Assistant Secretary*, 96 Bridge Street, Salem, Mass.

1889

Under the heading of "People You Ought to Know" in the Boston *Herald* of October 28 was the following regarding Juddy: "Mr. Wales . . . is not a young man. He is not even young as an artist but he is young as a professional etcher. . . . He sketched for forty years until finally Bill Paxton, the painter, urged him to exchange the pencil for the etcher's needle, and taught him a few secrets in the manipulation of copper plates, wax grounds, and biting acids. . . .

"He was at that time (1888) an architectural student at Technology in the Class of '89, but he left the school a year early after an agreement with his father that going to work at once was more advisable than taking chances on a diploma at the prescribed end of his course. For three years he worked as draughtsman and superintendent with Peabody and Stearns, architects, and then, in 1891, made a sketching tour of Europe with Dwight Blaney. After another year in Wichita, Kans., he returned to Boston in 1893, united with Henry C. Holt in the firm of Wales and Holt, practised in partnership till 1906 and then alone till 1925 when he became a full time artist.

" . . . He has been interested in guns and shooting all his life and still makes an annual duck shooting trip to Cape Cod. For the past few years he has lived and worked at 1064 Beacon Street, Brookline."

The Washington *Post* rotogravure section of December 8 carried a group photograph with the following caption: "Executives of the leading public utilities, last of the groups to confer with President Hoover on the stabilization of the nation's industry. The conference included Secretary Mellon, Secretary Lamont, Owen D. Young, Samuel Insull, and many others." And in a prominent situation near the center appeared the face of our classmate, Frank L. Dame.

1889 Continued

Frank Goodwillie died on October 17, 1929. The Secretary has no further particulars.

Samuel B. Sheldon died of a sudden heart attack in Duluth, on November 22. The Duluth *Herald* carried the following story of his life: "Mr. Sheldon, one of Duluth's industrial leaders since he came here May 13, 1913, as general superintendent of the steel plant, was born on August 31, 1868, at Manchester, Mass. He attended schools in his home town and later was graduated from M. I. T., where he won fame as a baseball player. Upon completion of his technical training he entered the steel business, in which he played a prominent part for about forty years. He held executive offices with the Lackawanna Steel Company and the Bethlehem Steel Corporation before coming to Duluth sixteen years ago. In 1920 when George L. Reis retired as Vice-President and General Manager, Mr. Sheldon succeeded him and held the office until the death of Judge E. H. Gary, President of the United States Steel Corporation, two years ago. Judge Gary had held the office of President of the Minnesota Steel Company and shortly after his death Mr. Sheldon was named President of the local plant. In September Mr. Sheldon was taken ill with an indigestion attack and was confined at St. Mary's Hospital for about two weeks. He had been in good health ever since and was at his desk at the steel plant all day yesterday. He suffered a heart attack while reading at his home, 2317 Woodland Avenue, shortly after midnight, from which he failed to rally. He was a member of the Kitchi Gammi Club, the Northland Country Club, the Allentown, Penna., Lodge of Masons and the Aad Temple of Duluth Nobles of the Mystic Shrine. — WALTER H. KILHAM, *Secretary*, 9 Park Street, Boston, Mass.

1891

Arthur and Mrs. Howland leave for a trip of five months around the world in January. Arthur says that the preliminaries of inoculation, and so forth, are rather strenuous to say nothing of clothes, and especially of securing and breaking in an adequate assortment of shoes. We shall expect a full account of his trip on his return and in the meantime wish him "Bon voyage."

Morris Knowles has been seriously ill for some time but is now doing a little work at home and getting to the office once in a while. He has had a hard pull and we all hope he will soon be in the best of health again. — Fred Norton is now living in Youngstown, Ohio, at the Lincoln Apartments, according to a notice sent the Secretary from Technology. We have not heard from Fred for a long time and the Secretary wrote him at that address a few days ago but has had no reply at the time of sending in these notes.

The Secretary and some others in the Class received an invitation to attend services in Winchester at the unveiling of a memorial window for Will Palmer, and also a window in memory of Will's

grandparents. The following is an account sent the Secretary by Mrs. Palmer: "Sunday morning, November 10, a stained glass window in memory of William Irving Palmer, who died February 7, 1929, was unveiled at the First Congregational Church, Winchester, Mass., of which church he was a member at the time of his death. Mr. Palmer also served for three years on the prudential committee of the church. The window is the gift of his widow, Clara H. Palmer. It was designed and executed by Reynolds, Francis and Rohnstock, stained glass manufacturers, of Boston, Mass. In considering a design for the window, which would most saliently interpret Mr. Palmer's character, it was decided that his great interest in social service should be emphasized. The theme chosen was, therefore, that of the Good Samaritan. The upper medallion represents Caritas as a woman's figure, holding a waif in one of her arms, and her other hand on the shoulder of a second waif standing beside her. The predella, or lower medallion, represents the Good Samaritan taking care of the wounded man who fell among thieves. The figure of the Levite passing by on the other side is also portrayed in this medallion. The window is done in antique glass, blue and red being the predominating colors. It is in keeping with the design of a series of side aisle windows which are being installed, and adds greatly to the beauty of the auditorium."

The following is from a letter from Hanington in Denver, Colo.: "I have just returned from California with my wife and son. We drove home, coming by way of Yuma, Phoenix, Globe, Lordsburg, Albuquerque, Santa Fé, and so forth. The roads were fine with exception of few detours and weather wonderful. I had visions of driving into Denver over snowdrifts but was agreeably disappointed and weather here has been as fine as California since my return. However, we have already made a good start by thirteen snowstorms so far. This will mean plenty of water for next summer so we should worry. I have had a new job thrust upon me this fall, Vice-President of the Denver School Board. Very interesting work it is, too."

The following is from a letter from Barney Capen after a call on him by the Secretary and Mrs. Fiske accompanied by Arthur and Mrs. Hatch. Incidentally, we enjoyed a fine shore dinner at Kimball's in Cohasset. "I am glad that you could see something of this beautiful place and my pretty comfortable room which I am enjoying more now than in the warm weather when I sat out on the screened piazza until nine or ten in the evening. Dark and cold now so early that I usually go into my room by five o'clock or earlier. Eva (Mrs. Capen) made my room more attractive and homelike with my '91 pictures, and so forth. She is in Atlantic City with her father. I shall miss her very much as she came to see me every few days last winter when I was in Brookline, but it is not best for her to be alone at home as she was then, and of course

she feels more comfortable to be with her father and knowing I am so happily situated. He is remarkably well but is over eighty.

"Gorham and Mrs. Dana, Howard and Mrs. Forbes, George and Mrs. Holmes, Charlie and Mrs. Garrison have taken me out to ride and Harry and Mrs. Young and Harrison and Mrs. Cole have been here to see me. Dr. Lynch came recently and asked me if I felt as well as I looked and sent Dr. Rogers to see me. Dr. Lynch sent a car for me with chauffeur and one of our nurses and took me to my dentist. Dr. Rogers came out the afternoon you were here and he was much pleased and I think surprised with the condition of my knees and my general condition. He does not advise the braces. I walked for him with and without and exercised. He said to keep on, only 'more so.' He was very encouraging as to the continued strengthening of the muscles which operate to straighten the legs. Of course, I was very much pleased and surprised too, as I feared I had slipped and lost more."

"I had a nice letter from Fred Blanchard who says he has a 'fellow feeling' for me. He was operated on for the same thing and also at the Deaconess on October 23 and is at home from work until about Christmas but goes out. He is coming to see me. Good old Major, I was indeed glad to hear from him. 'Faith is the sun which casts no shadow.'

"I am glad some one from '91 could go out to the Memorial Window services for dear old Billie. I wish that Eva and I could have been there. How I remember his frequent little visits with Mr. Somes, especially on my birthday. Always happy and cheery and so interested in '91 and news of the boys. I am enjoying good old Campbell's sweater and bath robes which Mrs. Moore so kindly sent me."

The following is from the Hartford, Conn., *Courant* of November 19: "Horace H. Ensworth, President of L. L. Ensworth and Son, Inc., of Hartford, with which he has spent his entire business life, was elected a member of the board of directors of the three Travelers insurance companies at a meeting of the board Monday noon. Mr. Ensworth fills the unexpired term of L. F. Butler, former President of the Travelers, who died on October 23. Mr. Ensworth was born in Hartford and on his graduation from Technology in 1891, he became associated with his father in a firm that had been established in this city in 1801 to job iron, steel and heavy hardware."

"Mr. Ensworth has been associated with the Travelers organization in a directorial capacity since May, 1916, when he was elected a member of the board of directors of the Connecticut River Banking Company, controlled by the Travelers."

Several letters to the Secretary have expressed the hope for a class dinner this winter. We will try to arrange this for early February. — HENRY A. FISKE, *Secretary*, Grinnell Company, 260 West Exchange Street, Providence, R. I.

1893

The Secretary received in December the following interesting letter from Howard R. Sargent of the General Electric Company at Bridgeport, Conn.: "I wonder how many of us ever stop to think of the time the Class of '93 spent in the old drill shed back in 1889. Some were unfortunate enough to be obliged to spend their time in drilling with guns; others were fortunate enough to spend their time in the empty freight cars practising music. When dress parade was called, the musicians (?) proudly stepped down the length of the hall in front of the assembly troops. At the head of the drum corps was Harold Mott Smith, drum major, with the writer directly behind playing a fife.

"This is all brought to mind by the beautiful paintings in the General Electric calendar which I am sending you under separate cover. You will note that a portion of these works of art are by our classmate and dear friend, Harold Mott Smith, whose life has been devoted to the study and execution of many wonderful paintings, not alone in the mechanical field, but in the realm of pure art as well."

J. Vaughan Dennett has sold his Framingham place and returned to his birthplace, Saco, Maine, where he is having one of the old houses renovated, especially to accommodate his large library. On the place in Framingham stands a Colonial house built in 1774 and the so-called Rugg elm, one of the oldest in Massachusetts. It is said to have been planted in 1775 and its girth, when last measured, in 1885, was twenty-two feet. The spread along the road is 150 feet.

Announcement was made on December 12, by Mr. and Mrs. Charles W. Taintor of the engagement of their elder daughter, Ellen Hemenway Taintor, to Yann Dedons de Pierrefeu, eldest son of Mrs. Joseph D. Leland of Milton, Mass. Mr. and Mrs. Taintor gave a small tea at their Beacon Street home in honor of the event. Miss Taintor is a member of the Junior League, and made her debut 1924-1925. Mr. de Pierrefeu, who is a graduate of the Groton School, is now with the Old Colony Trust Company.

Frank L. Connable's business address has changed from Wilmington, Del., to 11 East 68th Street, New York, N. Y.

By way of the office of the "Register of Former Students" we learn that Fay Brigham Kendall, Course VI, died on March 23. Kendall was with the Class for three years. After leaving the Institute, he took up the study of law at Boston University Law School, receiving his degree of LL.B. in 1897. He was engaged in the general practice of law and was also, for some years, instructor in the evening law school of the Y. M. C. A. His office was at 24 Milk Street, Boston; his home at 39 Prospect Avenue, Newtonville, Mass. — FREDERIC H. FAY, Secretary, Waterman Building, 44 School Street, Boston, Mass. GEORGE B. GLIDDEN, Assistant Secretary, Box 1604, Boston, Mass.

1896

Recent reports from George Merryweather in Cleveland would indicate that he is getting along well and is in excellent health. He has a boy in school here in the East and a daughter at Smith College. He intimated that he would probably come East to spend the holidays with them. We hope to see him if he does come and gather some more news.

We are often mentioning Hermann Charles Lythgoe in this column. This time he acted as candy tester. The Assistant Secretary had occasion to find a poison candy case and sent samples to the office of the Director of the Division of Food and Drugs at the State House. Lythgoe reported that he had tried the physiological test on himself and members of the staff. Lythgoe seems to be able to eat anything, but it must be pretty tough to have to eat poison candy to keep a position on his staff.

According to the newspapers Eugene Hultman, present Fire Commissioner of Boston, is subject to removal under the new régime of Mayor-Elect Curley. It is gratifying to announce that in the past two years nothing has happened to reproach the efficiency resulting from the general housecleaning which Gene was responsible for. Boston will lose a valuable servant if the reputed rumors of his removal are true.

A letter just received from Arthur Baldwin in Paris says that he ran across Harry Fisk in Venice out at the Lido. Arthur claims that he was there on business, "believe it or not." We reserve the right to draw our own conclusions. He also sent his greetings to the Class and commented on the Class Book. Here again we get an appeal for the completion of the Class Book, for he says that the Class should come to the rescue of the authors by filling out their questionnaires and sending them in. "No doubt," he wrote, "Charlie and John are having trouble in getting the questionnaires answered." It is up to the Class to help the men who are getting out the book. At the present time all records of classmates who have replied are in final manuscript form ready for the printer.

Classmates will learn with regret of the death of General Dwight E. Aultman of Pittsburgh, Penna., which occurred at the Walter Reed Hospital in Washington on December 12 after an illness of five months. He was the ranking Brigadier General of the Army. Although Aultman finally affiliated with the Class of '95, '96 men will remember him as having been connected with '96 more or less during his stay at the Institute. The Secretary hopes to be able to supply further details in the next issue.

The Secretary's story of last month left off as he was reaching Honolulu on October 16. That day and the following were two wonderful days of entertainment and enjoyment with the Engineering Society of Hawaii as hosts. The forenoon of the sixteenth was devoted to scenic drives while in the afternoon members were free to do as they pleased.

Headquarters were at the new Royal Hawaiian Hotel at the famous Waikiki Beach. Some enjoyed surf bathing, while the more cautious went out in out-rigger canoes. Those who were extremely conservative watched a native perform the feat of walking up a vertical cocoanut palm for cocoanuts. That evening there was a reception by Governor Judd at the Moana Hotel followed by a dinner featuring Hawaiian dishes, and during the dinner there was vocal and instrumental music and dancing in the real Hawaiian style which is not exactly the same anywhere else. The culmination of the evening, however, was in the open courtyard of the hotel under a great banyan tree facing the beach. There we enjoyed an entertainment by members of Hawaiian families who gave us a treat in the form of old songs and music which is very rarely offered to a visitor at the islands. Under the full moon it gave us all the thrill which comes only once in a lifetime.

On the next day, October 17, visits were made to Dole's Pineapple Cannery and to a sugar mill, and at noon Technology members were guests of the Hawaiian Technology Club at a luncheon in the club house of the Oahu Country Club. The total number attending was thirty-eight of which fifteen were from the United States. We sailed for Yokohama that afternoon and went through a restful period of ten days more on board ship. We people on the *Korea* thought that we were a little better off than those on the *President Jackson* which was the official ship. Captain Akiyoshi mingled with all the passengers and took an active interest in the sports and his attitude was reflected in the congeniality of the entire crowd and made them like one big family.

On October 27 we saw Mount Fuji beautifully appearing as dawn broke and the sunrise also was particularly beautiful. More space than is available here would be necessary to tell the complete story of the thirty days that the Secretary and Mrs. Locke spent in Japan. The first event was the reception by Baron Furuichi on the evening of October 28. The World Engineering Congress opened the next morning and from then until the closing ceremony on November 7, we were overwhelmed with the hospitality and entertainment. Sessions were held daily both in the forenoon and afternoon, but, sad to relate, many of the foreign delegates did not attend the sessions fully. With luncheons at noon, garden parties in the afternoon, and dinners and receptions in the evening, the days were very full. Consequently, one did not get to bed very early. Lunches, garden parties, and receptions all involved eating and drinking, practically equivalent to a banquet in every instance. The Secretary's waist line suffered accordingly and his avoirdupois increased fifteen pounds. Perhaps the high spot was the day of the luncheon by the Mayor of Tokio at noon, a garden party by the Army at 2:30 P.M., another one by the Japanese Mining Engineers about 4

P.M., a dinner by the American Institute of Mining Engineers and finally refreshments about 11 P.M. The food on each occasion was sufficient for a regular meal.

After the Congress closed on November 7 there followed a period of about two weeks of excursions. The Secretary visited the famous copper mines at Ashio and he and Mrs. Locke joined excursions to Kamakura, Nikko, Kyoto, Nara, Beppo, and made a trip on the famous inland sea. For about a week Mrs. Locke was parked in Kyoto and from that point as a center went with excursion parties to Kobe, Miyajima and elsewhere, while the Secretary was on his own as the guest of the Sumitomo Company and the Mitsui Company and visited the Beshhi Copper Mine, mill, smelting plant, and other industrial plants and also saw Baron Dan's widespread operations in coal mining and allied industries at Miike, and the coal mining operations of the Sumitomo Company in Kyushu. Going by himself in this way the Secretary was personally conducted and had a splendid opportunity to become familiar with Japanese life and industry outside of the large cities. No effort was spared by his hosts to make the trip most enjoyable and profitable. Incidentally visits were made to the Universities of Tokio and Kyushu and gatherings attended of Technology Alumni at various places. Tokio University has 10,000 students; Kyushu has 2,000, and there are numerous other universities of good size that indicate the extent which higher education is being given in Japan.

The Secretary went to Japan with a list of about 120 names of Japanese with whom he was personally acquainted, and he was happy to see over fifty per cent during his visit but he also made the acquaintance of as many more so that he now feels that he has many friends in the mining and metallurgical plants of Japan. Technology men were present everywhere. The total number going from the United States was twenty. Some came from China and of course, there were a great many Technology men among the Japanese members of the Congress. An early list made up indicated a total attendance of over 500 members and guests outside of Japan, and of this number nearly fifty per cent were from the United States. Japanese members of the Congress were over 2,000. The Secretary has no final statistics but he is sure that these numbers were considerably exceeded in the final enrollment. Technology men took prominent parts in the Congress. For example P. Y. Hu was one of the official delegates from China and delivered a fine address at the opening session of the Congress. He graduated from the mining department of Technology only twelve years ago and he is now director of mines in China. Incidentally probably more silk hats were gathered together in Japan during this Congress than ever before at any meeting. Members of the Congress were particularly favored by being received at the houses and grounds of famous people, an opportunity which the tourist never gets. The chrysanthemum

season was at its height and many rare and beautiful specimens were in evidence and the autumn foliage at Nikko and elsewhere was particularly brilliant in color at the time of the excursions.

Nineteen years had elapsed since the Secretary was in Japan before, and during that time tremendous strides have been made. Yokohama and Tokio have been rebuilt with wide streets and modern buildings of foreign style. Electricity is available everywhere, even in the smallest country village, and railways run all over the islands. Manufacturing is developed on a wide scale and Japan seems destined to become a great manufacturing country. The members of the Congress all felt that it was deplorable that a nation which had made such advance in civilization and which is in every respect on a par with other civilized nations should be held in discrimination under our immigration laws. Japan is certainly entitled to her quota just the same as other nations.

Secretary and Mrs. Locke sailed from Japan with many regrets on November 26. The return trip was uneventful but enjoyable since many members of the Congress returned to America on the *President Taft*. A day was spent in Honolulu and a lunch was held by the Engineering Societies of Hawaii, but the Secretary was unable to attend on account of engagements made with friends previously. However, he did have the good fortune to have a few minutes talk with Dr. Jaggar just before luncheon. It was also his good fortune and that of Mrs. Locke to run across Lawrence N. Gruelle, who took them on the famous Tantalus Drive to heights where one can see in every direction. Landing in San Francisco occurred on December 11 and the day was spent in that city and some Technology men seen. Charlie Hyde made a special trip all the way from Berkeley to make a call and to say that his report on his European trip would be supplied for the class news in the near future. Charlie did not look a day older and reported that the entire Hyde family was feeling fine. At Los Angeles the next day some more Technology men were seen and then from December 13 to 19 the Secretary made a trip around the mines and mills of Arizona in company with Professor T. G. Chapman of the University of Arizona. In the short time of four days an automobile trip covering over 600 miles with visits to seven camps was made, which meant that there were few idle moments. Noyes Weltmer was met at Superior; Carol Stone and Harold Humes at Douglas; L. T. Buell at Bisbee, and F. H. Soderstrom at Tombstone. A very pleasurable event was a dinner in the Dominion Hotel in Globe on Saturday evening, December 14, where Guy Ruggles was host and where he and Mrs. Ruggles made special arrangements of flowers and decorations along the Technology color scheme. Nine men were present including G. H. Ruggles, I. M. Symonds, G. H. Booth, H. C. Plummer, F. W. Libbey, F. S. Small, H. S. Duncan, T. G. Chapman and C. E. Locke. It turned out later

that Soderstrom was in Globe that evening but this was not found out in time to get him to the dinner. The final event of the trip was the arrival home on the evening of December 23, two days before Christmas after passing through the Chicago blizzard.

Another '96 man to attend the World Engineering Congress was Dr. George K. Burgess, Director of the Bureau of Standards and Chairman of the National Research Council. He was an official delegate of the United States Government and also of the National Academy of Sciences, the American Society for Steel Treating, the American Society for Testing Materials (of which last two he is a Past President), The American Welding Society, Catholic University of America, George Washington University, and the Universities of Florida and Kansas. Burgess presided in two sections of the Congress, one on mechanics, the other on metallurgy and presented a paper on length measuring instruments. He was the only American to receive an honorary membership in a Japanese engineering body, the Society of Mechanical Engineers of Japan, which honor he prizes very highly. He was selected to make the address on the occasion of the conferring of the Holley Medal on Baron Shiba, a Vice-President of the Congress, by the American Society of Mechanical Engineers.

In addition to the official activities, Burgess was kept busy lecturing before university students, visiting manufacturing plants and government laboratories, and attending lunches and dinners. His high water mark was three dinners, several laboratories and three speeches in one day. He says, "I was greatly pleased to find how many friends I had in Japan. I was personally conducted everywhere I wanted to go, not only in Tokio, but in Sendai, Kyoto, Osaka and elsewhere, and everyone seemed to have but one thought: we were honoring their institution by visiting it. I was given exceptional opportunities to become acquainted with Japanese life in many aspects and greatly enjoyed meeting so many distinguished men. We do not sufficiently realize in America the tremendous strides our Japanese colleagues are making in science and engineering and a visit to any one of their laboratories is a revelation. I know of no better metallurgical laboratory than that of Professor Honda at Sendai; under Baron Shiba's direction Japanese aeronautical research, in variety, quantity, quality and financial support, ranks with the best. At the semi-independent Physical and Chemical Institute of Tokio, there is a staff of about 500, most of them working on research problems. The electrical laboratory of the Department of Communications has a staff of over a thousand engaged in testing and research. A brilliant example of biological industrial research is the Japanese pearl industry, the operations of which I witnessed in detail as the guest of Mr. Mikimoto at his pearl farm at Gokasho. Rarely is it possible for one to crowd into one short month such a variety of inter-

1896 Continued

esting activities as we had the good fortune to enjoy in Japan. I advise every '96 man to visit this fascinating country."

Parenthetically the Secretary would call the reader's attention to the fact that, as head of the Bureau of Standards, Burgess made an intensive study of the fifty-seven wiggles in the Hula dance at Hawaii with the idea of reducing them to a fewer number, and he passed very lightly over his initiation into Japanese bathing customs. Burgess has never been able to get to a Class Reunion so he and the Secretary counted this trip to Japan as such a reunion. However, in spite of all that Burgess has said it is a question whether he is the most widely known '96 man in Japan, because everywhere in that country a visitor finds the word Klim in the papers and on the billboards, this being the milk product of the Merrell-Soule Company of Syracuse, of which Irv Merrell is President. Consequently a Japanese baby learns to say Klim and Merrell among the first words spoken.

A post card with Christmas greetings was received from M. L. Fuller and Mrs. Fuller. At the time that the card was sent in December they were enjoying motor-ing over the mountains, along the rugged coasts, and through the tropical forests of Jamaica which they were revisiting for the first time since he made his earthquake investigation in 1907. Jim Mel-luish also sent greetings from far off Colombia, South America, and Charlie Hyde from San Francisco. — CHARLES E. LOCKE, *Secretary*, Room 8-109, M. I. T., Cambridge, Mass. JOHN A. ROCKWELL, *Assistant Secretary*, 24 Garden Street, Cambridge, Mass.

1897

Proctor L. Dougherty is still at the helm of the District of Columbia as President of the Board of Commissioners, which involves carrying out the laws enacted by Congress for the governing of a little over a half million people, and an annual expenditure of some forty-five millions of dollars.

It is also interesting to note the social side of his position. At the Oldest In-habitants Association dinner, at which Senator Capper was present, he and Sena-tor Capper made speeches pertaining to the nation's capital. He had occasion to light the Christmas tree located in one of their community centers in Washington, and at which he made a brief speech, his picture being produced in connection with the same in the Washington *Post* of December 21. He also was present on Christmas Eve at the White House when President Hoover lighted the National Community Tree. Recently a reception was given by the Ambassador of Chile in honor of Mr. William Culbertson, our Ambassador to Chile, which he at-tended, being a personal friend of Mr. Culbertson. So with the lighting of Christmas trees, attending receptions and dinners, Proctor finds something to fill in such spare moments as can be obtained.

Proctor spent his last summer's vaca-tion at Ogunquit, Maine, which is very near Hugh Moore's home at York Har-

bor, and they enjoyed a great many good fishing trips together. — JOHN A. COL-LINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass. CHARLES W. BRADLEE, *Acting Secretary*, 261 Franklin Street, Bos-ton, Mass.

1899

On December 14 your Secretary was agreeably surprised to hear the voice of Bert Greer on the telephone. Bert had journeyed to Washington from Morgan-town, W. Va., to attend the Annual Gridiron Dinner which is one of the privileges of owning a newspaper. If Bert enjoyed the dinner as much as the newspapers say the guests did, it would not be a bad idea to own a newspaper. Bert came over early enough so that we could have a reunion of two. This re-union was most successful, ranging from recriminations to flattery. Each accused the other of being anywhere or every-where on the map except at home. Bert insinuated that I was always out of town when he called me on the telephone, which he did frequently, and he won-dered if I ever did any work because he didn't believe I stayed at home long enough. This suspicion is one fostered by an old news item, printed when I couldn't help myself, to the effect that some one of the boys caught me in town once. This, it seems, was so unusual that it was considered news. So iniquitous an insinuation could not pass unchallenged and before our reunion was over Bert had unwittingly admitted that he ran around a bit spending three months in Florida every winter, not to mention a little jaunt to Japan and other places occasionally. The only reason he had any-thing on me was that I had not attempted to telephone him.

Having been pinned down to facts, Bert insinuated that we better talk about something pleasant, such, for instance, as days at old Technology. With his re-markable memory for people and events he brought back many half forgotten inci-dents. He reminded me that '99 un-wittingly elected a sophomore for Class President — a most unusual proceeding. A little later he recounted an incident that happened when he was running his thesis and caused him some anxious mo-ments. The slag ran out of the furnace into Professor Hoffman's shoes. The Professor, it appears, did not take kindly to slag in his shoes, and Bert was not at all sure that he would be passed. How-ever, the Professor was a true Christian and did not hold the accident against him in the final accounting of credits. Hence Bert graduated along with the rest of us and now owns considerable interest in a coal mine and manufactures steel sheets at his plant in Dover, Ohio, as well as publishes the newspaper above mentioned.

Bert should have attended the Reunion last June where his memory of incidents and people would have contributed to the hilarity of the occasion. Among other things he reminded me of the time he was invited to sit in the balcony during the prize drill, because he was too poor a re-

cruit to take part. That was one way of getting a reserved seat without paying for it. If we had had time we would have called on Colonel Bigelow, army drill master at the time, who now lives in Washington, to see if he remembered the incident. Your Secretary had an inter-esting and enjoyable afternoon and is looking forward to the time when some other member of the Class of '99 will drop in for a chat.

Tim Kinsman writes that he wishes he had some tidbits but that he knows little of interest, then he regales me with a story of the mosquito pest that grew so bad last summer that it was the main topic of conversation in the eastern part of Massachusetts. The mosquitos ap-parently got action for Kinsman wrote some letters and talked and found himself appointed on local and state committees, much against his will, but he accepted for the good of humanity as a whole. He informs me that if anyone thinks he can play golf without nerves, keep an eye on the ball, and pay no attention to the mos-quitos, he (Kinsman) would like to refer any such to several courses where if persons can play them without paying more attention to and using more hard language on the mosquitos than on the golf ball, they will receive a diploma. Page Clancey Lewis.

From George Dike comes the informa-tion that on December 1 a branch of the Boston office of Macleod, Calver, Cope-land and Dike was opened in Detroit, under the firm name of Dike, Calver and Gray, 1508 David Stott Building. This office is in charge of Elmer J. Gray.

Three others heeded my appeal but I re-serve their contributions until later. — W. MALCOLM CORSE, *Secretary*, 810 18th Street, Washington, D. C. ARTHUR H. BROWN, *Assistant Secretary*, 53 State Street, Boston, Mass.

1900

At a Class Dinner December 16 in the Faculty Dining Room at Walker, the following committee chairmen were ap-pointed to start the machinery in motion for the Thirtieth Reunion on June 1: Enrollment, Allen; Transportation, Bow-ditch; Finance, Fitch; Sports, H. E. Os-good; Entertainment, Ziegler; Accommo-dations, Crowell; Badges and Prizes, J. B. Conant; and Ladies' Entertainment, Wastcoat. About twenty members were present and all were enthusiastic about the Reunion. Bowling completed the program.

Wastcoat sends in his usual breezy letter as follows: "I have received your post card about the dinner next Monday night. I don't know why it is, but some-how or other a date is always selected for these meetings that does not fit into my schedule. Next Monday evening the Lion's Club is putting on a play at the theatre, the actors and actorines being local talent. I was nicked for some tickets long before I received your notice and as the family know about the event and also that I have the tickets, it puts me in a rather difficult position to try to crawl out, especially so with Christmas at

1900 Continued

hand. I don't think it is any reflection on the rest of the family to say that I would much prefer to be with the old men who will undoubtedly be present.

"In regard to the plans for the Thirtieth Reunion, I will say right now that I am in favor of anything. I might even be persuaded to spend another two months camped out in the Commonwealth Armory, or in the Brighton Police Station if I could have some of the old boys to live with. But seriously speaking, any plans that are made will have my hearty approval and no matter where you go or what you do, you can count on my presence if it is physically possible for me to get there. I hope, however, before next June rolls around, that George Russell will have something happen to him that will turn his hair gray so that he will look like one of the fathers instead of one of the sons. In fact if such a change hasn't taken place, I think it is up to some of us to whitewash his hair and make him look like the rest of us.

"There is nothing new with me, except that I am a little poorer than I was a few months ago, but outside of that we are running along just the same as usual, trying to make enough money so that once in a while we can have not only a little butter on our bread but also a little frosting on our cake, maybe once a week. The only thing that has at all disturbed the even tenor of our way was the earthquake that we had a month ago, and the raccoon that I ate last night at a game dinner which today is apparently clawing my insides a little bit.

Stanley G. H. Fitch of Patterson, Teele and Dennis, Vice-President of the American Institute of Accountants, attended as one of the official representatives of the American Institute of Accountants the Fiftieth Anniversary banquet of the Society of Chartered Accountants of the Province of Quebec, held at the Windsor Hotel, Montreal, on December 5. The outstanding event of the anniversary was the presentation by the members of the Quebec Society of a silver loving cup to Alexander F. Riddell, the sole surviving charter member of the society. It is perhaps needless to add that the loving cup was appropriately christened after the conclusion of the presentation address and a response was made by Mr. Riddell. Members of the Massachusetts Society will no doubt be interested to know that the Society of Chartered Accountants of the Province of Quebec is the oldest society of its kind on this continent, having been incorporated on December 5, 1879. Mr. Riddell was its first Secretary.

Members of this Class intending to make an over-night stay in Boston may avail themselves of the privileges of the University Club by applying to the Class Secretary for a card of introduction. The Club is centrally located and charges reasonable. — C. BURTON COTTING, *Secretary*, 111 Devonshire Street, Boston, Mass.

1901

Christmas Eve, gentlemen, and so my message to you goes out replete with the cheer of the holiday season, with good

wishes for the year to come, with remembrance and good will. It is true that this genial message will lose some of its meaning when painfully exhumed by you from the advertising matter at the end of *The Review* long after 1930 has become an established fact. Anyhow I get a kick out of saying it at this time and some of you may receive it in the spirit in which it is offered, even though you are called upon to warm it over for personal consumption.

Solon J. Stone, whose abbreviated name, Sol, is no more sunny than his genial nature, writes me that he has been in Richmond for a time establishing a branch office of the John W. Cowper Company, of which he is the chief engineer. I quote him exactly: "Nothing exciting about this except having to climb into an upper on a week-end trip home to Buffalo the Saturday night before Inauguration Day. As many people seemed to be leaving Washington that night as were arriving." This is a charmingly elliptical way of telling his little fabliau, but why, in Heaven's name, take an upper? I have always supposed, on secondhand information, it is true, that the lower was the coin of vantage. There are refinements as yet unguessed.

I have just received a clipping to the effect that Bill Whipple, who for many years has been superintendent of the Cinclare Central Factory in Louisiana, has accepted the professorship of steam engineering in the State University at Baton Rouge. This is the first word that has come through for many years. I have written to Bill to ask him to elaborate this somewhat succinct statement, and also to sign up for the Thirtieth Reunion which draws on apace. I fancy most of us in thinking of Bill Whipple will also think of Brad Laws, his close companion, whose untimely death was recorded in these columns many years ago. Brad was one of the first of the Class to go but his cheery personality and indomitable good humor remain as a gracious memory.

Harry V. Allen is sales engineer with the Elliott Company with headquarters in New York. He has just written me to deplore the fact that the sale of power equipment does not lead him into the far distant lands and daily adventures which characterize the butterfly of the Class, now roosting with the *poussins* in Paris. I would suggest to Harry that Soviet Russia is fertile soil both for his vocation and for the avocational adjuncts which could embellish it. When this catches his eye, as I trust it will, I would suggest that he look me up in Boston on his next visit and I will give him facts, figures, and details which the censorious eye of the Editor of this sheet would never pass for his columns. We must not detract from the sales appeal of the advertising.

In an earlier letter I spoke of Harry Gilson's three grandchildren, saying nothing of the six children who form the biological union between them. Harry was for years with the United States Rubber Company and has recently been

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relieved of active responsibilities and placed on the consulting staff. I gather that this indicates a very tangible promotion although Harry with due modesty fails to indicate it as such. Reverting to the grandchildren, Harry has one daughter who is younger than any of them and is thus in the tactical position of being an aunt to her seniors. I sincerely trust that she exercises her functions with a rectitude of purpose and rigidity of practice that insures their future. Harry is going to be a neighbor of ours in the not far distant future, as he has acquired holdings in Groton, Mass., the town of his birth. I would urge that he so order his schedule as to participate in the Thirtieth Reunion as well as to inspect the ancestral acres. A year ago he gave a course of lectures at the Harvard Graduate School on rubber. I mean that was the topic. He has some sixty patents to his credit so it may be safely inferred that he has been tolerably busy during these intervening years. He writes that Foljambe was at one time with the Goodyear Company.

Foljambe, by the way, while he falls far short of the unique record of the early Bill LeBosquet, is also inclined to be peripatetic. As I remember, he started in life as a naval architect, but I have heard of him, indirectly only, as editing trade journals, building airplanes, engaged in the gentle art of pedagogy, and now we find him resilient, engaged in the rubber business. I have written to the company, but before I get a reply, I feel reasonably certain that he will have bounced into some new field of activity and certainly be somewhere else.

Philip Wyatt Moore, the faithful Vice-President of Poor and Company — this latter a misnomer — is gradually being socialized and has left his Private Road to domicile on Fishers Lane. His natural seclusiveness, however, finds expression in the number "1031," from which I infer that Philip's abode is not at the hither and metropolitan end of this thoroughfare. Phil with Frank Chase and Leslie Millar have just been a committee to select a candidate for a freshman scholarship in architecture. It would be interesting to know the basis of this selection. Phil pledges himself for the 1931 Reunion and hopes to space it between the graduation of one olive branch from high school and an older shoot from the same parent stem from Harvard. Without Philip's presence the Reunion would lack its finest savor, and the local committee hereby pledges a selection of dates which will allow Philip both to do his duty by his progeny and to foregather with his own generation. Philip lives at the receipt of custom.

Abraham Rosecrans Baldwin, A.B., a graduate of Course II, who has long been on our "Wanted" list, lives in Lake Forest and is thus within ten or fifteen miles of Phil, patently a close neighbor. Alexander Hay Brand Jeffords, another of the missing, is said to be a well known figure in Indianapolis. I am hoping to get in touch with him. George Hyde, not one of the missing it is true, but none the less a most elusive individual, visits

1901 Continued

Philip for reasons which we can well understand. Truly the center of population is slowly moving westward.

The mice are quieting down and with that subservience to tradition which has interfered with many potential pleasant acquaintances, I follow suit. I shall greet you again in the New Year and with the Five Year All-Technology Reunion—not our Thirtieth Reunion—a thing of the immediate future. Charlie Bittinger, please notice. — ALLAN W. ROWE, *Secretary*, 4 Newbury Street, Boston, Mass. V. FRANK HOLMES, *Assistant Secretary*, 250 Stuart Street, Boston, Mass.

1902

Next June during the General Reunion, the Class will hold a dinner on the evening of Friday, June 6, the place to be announced later. Friday evening has been designated in the program of the General Reunion as the time for the Class to get together. A week after the General Reunion, the Class will have an outing at the Riversea Inn, Saybrook, Conn.,—the scene of many pleasant gatherings in past years. This outing will be from Friday afternoon, June 13, to Sunday afternoon, June 15. These dates have been picked as more likely to get out a good attendance than the days just before or just after the General Reunion. The interval between the two affairs will afford classmates who attend the General Reunion a chance to recover and to get their second wind—while those classmates who come from a distance will have the few days interval for visiting relatives or attending to business matters in Boston or New York.

Ken Lockett is a manufacturer's agent for various building specialities, being located at 154 East Erie Street, Chicago. His preferred mail address is his residence at 542 Roscoe Street. — Manley has been very busy the past year in rebuilding the Baltimore plant of the Proctor and Gamble Manufacturing Company. — Classmates will be glad to know that Roland Pendergast has so far recovered from serious injuries received in an auto accident last July that he is able to navigate with slight assistance from a cane. He has returned to his home in Wellesley Farms and is able to visit Boston almost daily. — FREDERICK H. HUNTER, *Secretary*, Box 11, West Roxbury, Mass. BURTON G. PHILBRICK, *Assistant Secretary*, 246 Stuart Street, Boston, Mass.

1903

What news there is for this month is brief. Hermon F. Bell has been admitted to membership in the firm of Lybrand, Ross Brothers and Montgomery, accountants, with offices at 110 William Street, New York City. — J. A. Cushman, *Assistant Secretary* of the Class has changed his office to 89 Broad Street, Boston, where he is located with the New England Power Construction Company.

Samuel B. Tuell has been elected President of the General Public Service Corporation, with offices at 120 Broadway,

New York City. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, 89 Broad Street, Boston, Mass.

1905

"See America first," said Charlie Johnston after reading the world travel tales of Payne, Senger, Cutting, and Wentworth, and started on the trip which he reports. "Last spring I went to California. In Chicago I had lunch with George Jones and in San Francisco I had several pleasant visits with Fred Eaton. Mrs. Johnston and my eleven year old daughter, Marjorie, made the trip west with me and, while business consumed the most of my time, I did succeed on this trip in seeing considerably more of California than I ever did before. From San Francisco we motored down to the Yosemite and several times drove over through San Marin County, north of San Francisco. From Los Angeles we motored down to San Diego and into Mexico, then back through Riverside and the orange country. From San Francisco I went north by train to Portland and Seattle, and in Seattle saw Joe Daniels and Leonard Bushnell. Leonard is a good Rotarian and has done much for his club, which is one of the best in this country.

"After stopping in Denver, Colorado Springs, Kansas City, St. Louis, Chicago, Detroit, Toronto, and Buffalo, I arrived home just about in time to start on a little vacation up in New England. In Boston I saw Charlie Hawkes and Ed Barrier at the Rotary Club, and in New York, as often as I can, I see Roy Allen. On the way to New England I had the great pleasure of a dinner at Roy's home.

"I am glad to be able to tell you that all those I have seen were well and, while I am getting bald on top and otherwise showing signs of wear and tear, Eaton and Bushnell, whom I had not seen since leaving Technology, readily recognized me as the same old sixpence, and this in spite of the fact that I have retained neither my "school girl complexion" nor my "girlish figure." In fact, I am truly sorry not to be able to report any improvement over twenty-four years ago.

"I am still manager of the Virginia Smelting Company. Liquid sulphur dioxide, which we started years ago to make from our smelter smoke as a by-product, has become our main product. We sell it under the trade name of "Esotoo." Our refrigeration grade, used in the small household refrigerators, is a most pure product; so pure that it is extremely hard to analyze it. Actually, as we make this refrigeration grade it runs 99.999 per cent SO₂. That other pesky one part in 100,000 is water. If variety is the spice of life, certainly I am living a very spicy life, for I meet, in my work of expanding the uses of Esotoo, a very great variety of problems. These problems necessitate the traveling from place to place to meet those who are interested in our product or are already using it. Then, too, we have agents scattered over the country. On the trips I have often had the pleasure of meeting some of my old classmates."

Phil Darling has been elected Secretary of the Pootatuck Yacht Club of Stratford, Conn. All we know about Phil as a yachtsman is what Carl Graesser wrote a while back. It took Carl's boy to get them into Southport Harbor one dark night after a dinner at Larchmont. — Jim Barnes was one of the thirty-one business and industrial leaders who met with President Hoover on November 27 to pledge their coöperation in the nationwide movement to counter the after-effects of the stock market decline.

Ralph Whitcomb writes from New York: "The J. G. White Engineering Corporation still tolerates me. As you know, I have been with the White Companies since that delightful day in May, 1905. Bill Green and I then left for our first jobs on railway construction between Worcester and Leominster, Mass.

"My activities as manager of our engineering department, over a period of a dozen years or more, involved me increasingly in business getting activities to such an extent that in 1926 I began devoting my entire time to such endeavors. During the hottest weather of this last summer Havana, Cuba, had claims upon me, and it now seems likely that during the coldest weather of this winter Moscow, Russia, will possess me.

"I regret that I have no news of other '05 men of particular interest, but, as you suggest, I will try to surprise you at some later date with some items of interest. Your news seems to be running to travelogs of a quality difficult to equal, particularly your comments, which are perfectly all right but somewhat of a deterrent when one thinks of what you might do." What's that?

A post card from Innsbruck, Austria, told of Elmer Wiggins' trip with his wife to England, France, Belgium, Holland, Germany, Austria, Switzerland, and Italy. How we '05 men are doing the world! — Roy Allen is back in Schenectady, this time erecting a new electrical engineering building for Union College. His address is 2208 Grand Boulevard. — Fred Eaton, who has been among the missing, may be found at Rosenberg Brothers Company, 334 California Street, San Francisco.

Fred Poole is in New Castle, Penna., this time. He wrote in December that "New Castle was to have been home for Mrs. Poole and me for about two months, but it's now going on four and may be six." — Charlie Starr was married to Miss Lena Newcomb in Chicago on December 2. They are now at home at 7344 South Shore Drive. — Bob Lord's new tannery venture is going well. Bob gets out on the road regularly and holds his old customers. But Connecticut doesn't seem to be on his route. — Commander William A. Hall, who played the euphonium behind your Secretary in the freshman band, is a member of the naval mission to Brazil. — Bob Adams seems to have secured another contract and is in Nevada City, Calif.

George Hool, whose address of late has been the Hotel Shelton, New York, writes: "I have been made Vice-President

1905 Continued

of the John W. Ferguson Company, engineers and builders, with offices in Paterson, N. J., and New York City. Incidentally I will continue to do everything possible to keep up to date the fourteen books with which I have been connected."

According to *The Constructor* for November, sent us by Harry Nabstedt, Willard Simpson designed and made out specifications for the mat foundation for Texas's tallest building, the new twenty-six story Gulf Building in Houston. It is 440 feet high and stands on a solid reinforced concrete mat foundation over four feet thick. Before construction of this modern tower office building began, careful borings were taken of underlying soil all over the site. Finding almost no variation in boring samples, the designer determined upon the unusual mat type of support for the great structure of steel and reinforced concrete. An inch and a half settling of the finished building was allowed for. The foundation is based on the cantilever principle.

The forthcoming General Reunion will be held on Friday, June 6, and Saturday, June 7. Our own Twenty-Fifth will doubtless immediately follow. Time to start thinking. — ROSWELL DAVIS, *Secretary*, Wes Station, Middletown, Conn. SIDNEY T. STRICKLAND, *Assistant Secretary*, 20 Newbury Street, Boston, Mass.

1907

It is not the fault of the Secretary that there are no news items for this issue. He has heard from no one in the Class. Don't blame him that there is no news. You will have to write him if you expect to add inches to this column. — BRYANT NICHOLS, *Secretary*, 2 Rowe Street, Auburndale, Mass. HAROLD S. WILSON, *Assistant Secretary*, Int. Shoe Company, Manchester, N. H.

1909

No news last month, for lack of information. Take pity on your Secretary and send him some news. Even a line or two will be much appreciated. I was glad to hear from Major Riefkohl a few days ago. He is no longer on duty in Washington in the office of the Assistant Secretary of War, but has been transferred to duty in Brooklyn, as depot quartermaster of the New York General Depot. His address is First Avenue and 58th Street, Brooklyn, N. Y.

George Wallis, who has been active in class affairs in Boston, is leaving us January 1. For a number of years George has been in the Boston office of the Creamery Package Manufacturing Company. He recently has been appointed the general manager of the company and is moving to Chicago, where the home office of the company is located at 1243 West Washington Boulevard. We are always glad to see our classmates honored by the appointment to a more responsible position, and we congratulate George on his promotion, much as we dislike to have him leave us here in Boston. We are somewhat consoled by the fact that George will be obliged to

visit his eastern factories occasionally, so we may catch a glimpse of him now and then.

A few days ago fourteen of us got together at the University Club in Boston, for luncheon, to give George a little send-off, and, at the same time, to welcome Ken May, who, for the past three years, has been in Arthur Perry and Company's Philadelphia office, but who has now returned to Boston. We are glad to have Ken with us again.

Carl Gram writes as follows: "On a recent trip through the Middle West and South, I had a few minutes, while waiting at the railroad station in Kansas City, to talk on the telephone with Harry Havens. Unfortunately, Harry had a bad cold that evening, and was confined to the house, so he could not get to the station, and I had so little time that I did not dare to take a chance of getting lost in Kansas City at night and missing my train. Harry is in the structural steel business, and he has actually furnished considerable steel work to some of our competitors. While in Tulsa, I was able to stop and see Stewart Pearce for a few minutes. When in Houston, Texas, I visited Arthur Hartwell's plant, which consists of a foundry and machine shop, steel plate works, and structural steel shop, and I spent a very pleasant evening with Arthur and Mrs. Hartwell reminiscing about Boston and old times."

Tom Desmond has been appointed Chairman of the Reunion Committee for the All Technology Reunion, which will be held in Boston this coming June. The success of the Technology Clubs Associated meeting held in New York a year ago last June was largely due to Tom's efforts and guidance, so that we have every reason to look forward to a most enthusiastic Reunion in Boston this year. — CHARLES R. MAIN, *Secretary*, 201 Devonshire Street, Boston, Mass. PAUL M. WISWALL, *Assistant Secretary*, Postum Company, 250 Park Avenue, New York, N. Y.

1911

Believe it or not, there were eleven '11 men at the annual dinner of the Technology Club of New York at the Hotel Roosevelt, New York City, on the evening of December 2. But, to make it all the nicer, six of the boys were accompanied by their wives, and we just filled two adjacent tables and a jolly time was had by all. Our Class was honored by having Dick Ranger VIII as toastmaster, and except for Dr. Mees and President Stratton, the speakers, 1911 was the whole works, because Ye Sec went over from the Hub to handle the songs and cheers, and was aided and abetted by one Wilyum Orchard XI. Those who brought the wife were: Dick Gould XI, Bill Orchard XI, Dick Ranger VIII, Nat Seeley II, Don Stevens II, and Erv Young I, while the stags were Royal Barton VI, Roy MacPherson II, Bob Morse VI, Emmons Whitcomb X, and Dennie.

I ran across Dr. Louis Brody, who was with us for a short time in Course I, in Boston the other day and was delighted

to learn that his dental practice has grown so that now he has two offices, one at 419 Boylston Street, Boston, and the other at 1706 Commonwealth Avenue, Brighton. Louis transferred to Tufts in our early days at Technology but still believes in the Institute.

We learn from the latest issue of the "Harvard Alumni Directory" that Dr. Winthrop P. Haynes, with us a short time in Course XII, is now at 82 Avenue des Champs Elysées, Paris, France, while Charles S. Williams, Jr. V, is with Thomas A. Edison, Inc., at Orange, N. J.

At the annual meeting of the Massachusetts High School Coaches Association at the Commander Hotel, Cambridge, December 14, Charlie Linehan I, was reelected Secretary. Charlie is doing a sweet job teaching mathematics and coaching at Brown and Nichols, leading Hub prep school.

Ivory James III, who has been seriously ill in Denver, Colo., for several years, says he is feeling much better now and is prospecting with the Foster-James Leasing Company at Carnahan, Santa Fé County, N. M.

Bob Morse VI, who is still with American Gas and Electric Company in New York City, has a new home at 149 Maple Street, Summit, N. J., while Major Lawrence B. Weeks, C. A. C., U. S. A., has been transferred from Honolulu to the Metropolitan District and with his family is residing at 322 Hartford Road, South Orange, N. J.

Now, classmates, in 1930 let's sow the seed for a highly successful Twenty Year Reunion in 1931, by obeying the impulse to "write to Dennie" so the news will be newsworthy then ever. And remember, too, that the first week-end in June, 1930, will mark another Five Year All-Technology Reunion. — ORVILLE B. DENISON, *Secretary*, 32 Reed Street, Lexington, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford, Mass.

1912

At the risk of displeasing some of our staunch Republican classmates we're going to give Al Smith a little write-up in this column, in order to work in some news of Jerome C. Hunsaker XIII-A. Incidentally, if a few of either our Republican or Democratic classmates would get mad enough to write in, we'd feel that we had really accomplished something.

Quoting from the *New York Times*: "Former Governor Alfred E. Smith left for Washington last night to discuss with navy engineers the proposed airship mooring mast on the top of the New Empire State Building on the site of the Old Waldorf-Astoria on Fifth Avenue. Plans for this mast were announced on Wednesday by Mr. Smith. The decision to provide facilities for airship mooring in the center of the city was made, it was learned yesterday, after several discussions with engineers and officials of the Goodyear-Zeppelin Corporation of Akron, Ohio, among them Commander Jerome C. Hunsaker, Vice-President of the Goodyear-Zeppelin Company and President of the recently formed airship

1912 Continued

transport company which is planning a transpacific service. This mooring mast atop a skyscraper is perfectly feasible, Commander Hunsaker said. It will require some revision of the plans for the new building and certain engineering changes in the entire steel structure of the foundations to make provision for the stresses that would be set up by a thousand-foot airship swinging in the wind and held to the building by a single connection at the top of a 1,300-foot structure."

Next we have a news release from East Orange, N. J., reading as follows: "F. J. Osborne, Health Officer of the City of East Orange, left for Washington last night to attend the first meeting of the Committee on Public Health Organization of the White House Conference on Child Health and Protection, upon which he was recently asked to serve, by Secretary of the Interior Wilbur. Mr. Osborne has been asked to serve on this committee because of his experience in public health organization, his position as Chairman of the New Jersey Committee for the Prevention of Diphtheria and because of the outstanding position held by East Orange in public health work. This first conference as planned is for two days." Osborne tells us that he cannot disclose the work of the conference at this time, as all information must emanate from official sources. However, we feel that the Class of '12 will be pleased to learn of this recognition of one of its members, by having the Government call him into service of such a nature. F. J. Osborne VII can be addressed at 441 Main Street, East Orange, N. J.

At the annual meeting and banquet of the New York Alumni, last December, held at the Hotel Roosevelt, only four members of our Class showed up. They were H. M. Priest I, W. H. Lange I, R. J. Wiseman VI, and D. J. McGrath I. A letter was received from Lester White X, stating that he had planned to attend but was obliged to leave that day for a meeting of the American Institute of Chemical Engineers, at Ashville, Ky.

B. H. Morash VI dropped into our office one day recently and brought his own news with him. Morash who has been in London, England, for the last two years, as managing director for the Kelvinator Corporation, returned to the United States September 16. At the time he paid us a visit he was planning to sail for Tokio, Japan, on the S. S. *President Taft*, December 20, from San Francisco. We therefore, assume that by the time these notes reach you, you may visualize Morash riding in jinrikishas and drinking gin-rickies in the land of the Mikado. He is being sent there for a six months' stay to organize the Kelvinator of Japan Company, a branch of the well-known American concern. His address in Japan will be care of Imperial Hotel, Tokio.

We were able to cooperate in securing through the Secretary of the Alumni Association, Laurence Geer, letters of introduction for Morash to various Technology men in Japan. Many of us are

apt to forget that there are ways in which the Institute and the Alumni Association can be of service to us.

While in New York at the annual meeting of the A.S.M.E., your Secretary had the pleasure of meeting John Lenaerts II, who was attending the meeting and also the Power Show in the interests of the Hood Rubber Company, where he rates as engineering manager.

On the sleeper coming back from New York, I found that C. K. Reiman X was occupying the opposite lower berth, and I had an opportunity to find out that he was now with the National Tanneries at Peabody, Mass. Reiman has been with Arthur D. Little, chemical engineer, for the past ten years. He is now living at 171 Sargent Street, Newton, Mass.

Charlie Carpenter II has returned to Boston after having been in Atlanta for the past six years. I am in hopes to have some news of his doings in an early issue. — Your Secretary has just had a new roof put on his garage, the labor and material being furnished by J. E. Whitteley II, the well-known roofing contractor of Boston and suburbs. No leak has developed yet, and we are certainly hoping for the best. — Among the prominent '12 men with whom your Secretary has just come in close contact is Joseph Champagne III, Boston's famous *maitre de danse*. My four youngsters have been under his tutelage for the past two years, and have shown such remarkable progress that this winter Mrs. Shepard and myself have joined one of his classes. Joe knows his dancing, and also how to please the ladies. — FREDERICK J. SHEPARD, JR., *Secretary*, 125 Walnut Street, Watertown, Mass. — DAVID J. McGRATH, *Assistant Secretary*, McGraw Hill Publishing Co., Inc., Tenth Avenue and 36th Street, New York, N. Y.

1914

In the January issue we commented on the announcement of the engagement of Nemo Newlin. At that time, we made some comments as to the length of time it had taken Nemo to settle down. We take it all back, because hardly had the engagement announcement been made when the announcement of Nemo's wedding, on Saturday, December 28, arrived. The young lady to be congratulated was Miss Elizabeth Bell Battles, of Newton Square, Penna.

The only other items of news that has come in during the past month is that of United States Patent Number 1,736,814 covering an electrical transposition system which has been issued to H. A. Afel. The '14 men who are with the Telephone Company certainly do make work for the Patent Office.

Because of the large number of the original group of '14 men responsible for the Boston luncheons who have moved out of Boston, the regular luncheons for this year have been abandoned. It is, however, planned to hold a few special luncheons. The annual dinner will be held on June 6. It will be held late this year, so as to include it with the All-Technology Reunion events. By so doing, we hope to

have a large number of people away from Boston, present at the dinner. It is hoped that Freddie Karns will come up from Pennsylvania and perform his official duties as inspector, that he carried out so well five years ago.

These notes would be a lot more interesting if a few '14 men would shake off their natural sleepiness and send an occasional letter in to the Secretary. — HAROLD B. RICHMOND, *Secretary*, General Radio Company, 30 State Street, Cambridge, Mass. — GEORGE K. PERLEY, *Assistant Secretary*, 21 Vista Way, Port Washington, Long Island, N. Y.

1915

This column is fast becoming a mathematical problem, you know, approaching zero as its limit. And really, after all these years, I am not enough of a figurer to solve the problem alone without some outside help. I hope you all get my meaning. I know some '16 and '17 men I could write more about than I could about our own men. Not a line of news from any one.

A. H. Anderson I is now living at 4332 Forty-Second Street, Long Island City, N. Y., a new address. He said that he attended the recent dinner of the Technology Club in New York and saw there some familiar faces. Unfortunately he did not say whom he saw. Andy wishes us all a happy New Year, which I, too, extend to all '15 men, as this is written around the holiday season.

I recently dined and spent the evening with Charlie Norton II and his family in Newton. From what I've seen so far, engineers, or rather those in our Class, can pick attractive wives, all good cooks. Charlie and Mrs. Norton have adopted archery. Charlie even makes bows and arrows, and in two years Mrs. Norton has come to be one of the women champions of New England, with several prizes to her credit.

We are meeting in Boston shortly after the disturbing inventory period of the first of the year is over to arrange for the Fifteenth Reunion next summer. In the meantime, how about hearing from some of you? — AZEL W. MACK, *Secretary*, 377 Marlboro Street, Boston, Mass.

1916

Our Class is staging a real come-back in sending news items to me. I know that you will all be interested in this month's contribution. Bob Burnap writes as follows: "In view of the fact that I have not contributed anything for the class activities, your letter tempts me to divulge a little of the family history. I have been with the Edison Lamp Works of the General Electric Company since 1917, with the exception of a year spent in the Army during the War. During these years I have been engaged on lamp problems both from the manufacturing and the commercial viewpoint. It is surprising, until you give the matter a little thought, of how many activities lighting is a part and very often an extremely important part.

1916 Continued

"One direction in which my interest in the projection of light has led me has been into the motion picture field. During the past year, and at present, I am Secretary of the Society of Motion Picture Engineers, an organization of now approximately 700 members scattered pretty well over the world. This, of course, is a side line, but has proved very stimulating and interesting. I note every now and then the names of Technology men who are joining this society. At the present time I am interested in the technical features of the new General Electric Sunlamp, designed to give artificially approximate sunlight. I find that the subject of ultraviolet radiation is a very much discussed matter, but quite frequently most of it isn't so, or else is open to dispute among the authorities. At present I am writing quite glibly of anstrom units and the operating characteristics of the General Electric Sunlamp.

"I have managed to secure several patents on subjects related to lamp manufacture and have hopes that more will be added to the list. I was married three years ago last September. Our family now includes one ten month old daughter, Jean, who is a wonderful child. Herbert Ellis I see frequently. He is located, as you probably know, at Cleveland in the incandescent lamp department of the General Electric Company and is a very busy man, seeing that production and demand for lamps are equal. Of course he only attempts to control the production. I see other members of the Class of '16 at odd intervals, but do not remember at this minute any recent news of their activities. I always turn promptly to '16 Notes and I am always disappointed when the news items are scant. Last spring I was able to get over to a few of the Technology luncheons at the Fraternity Clubs Building, but have not found the opportunity this fall. Burnham of our Class is a regular attendant and very active in the New York Technology Club affairs."

It takes a good civil engineer (or was it sanitary, I have forgotten) to make a good teacher. Charlie Lawrence is doing a whole lot more for the coming generation than most of us and contributes as follows: "Promptly on receipt of your letter I sat down to prepare an Odyssey of my life for five years past. In fact I sat down so hard I stopped in my bed with a furious and puzzling attack of grippe which did not let up at all until two days ago — hence a customary delay. As for my history — it is nothing much. During these past years of prosperity I have been plugging away at the school business, being successively principal of the high school in Acton, Mass., which school I reestablished in 1925 after it had lapsed for some twenty or thirty years, then superintendent of schools in the same town. I never did know that there was so much to managing four schools which care for the education of some five hundred people. It is really a great game, if you can stand the gaff of hard work, political manoeuvre, and disappointment that comes occasionally. I can seriously

recommend it to any red-blooded ambitious Technology men wanting a real life job. Summing up the past ten years I can say that I am not greatly richer in goods but each year has accomplished results of real satisfaction in seeing people grow because you have helped them grow. Oh, I forgot the real important news: wife well and blooming; three boys full of vigor, vim and vitality, each of them just eating us out of house and home, but a joy, too. The oldest will be ready for junior high school in the fall. Can you believe that?"

Hovey Freeman, active as ever, writes as follows: "I am still at the same old job, my primary interests being insurance with considerable banking and real estate on the side. I am having a lot of fun developing a summer residence on Papoose Squaw Point opposite Bristol, R. I., and I hope to have eventually one of the most sightly spots in the Bay. It is wonderful what a steam shovel can do in a few weeks time to a landscape. My house is now completed except for a few of the final details. I hope you can come by water and make use of my new dock for you are always welcome. Five other Technology men of older classes came in with me on the purchase of this land so we will really have quite a Technology community. In fact five out of the seven people on the Point will be Technology men. The other Technology men are all business associates of mine, officers in the other Factory Mutual Companies. Fortunately for me, building this house started me selling a lot of securities and I got the habit, so by the time the crash came I had taken some very handsome profits and so now have the laugh at some of my friends who thought I was an awful gloom. I do not claim to have any special qualifications than perhaps my natural worrying disposition which caused me to be a little ultra cautious and conservative and I doubt honestly if it had not been for my building the house if I would actually have continued to sell and liquidate my holdings and put the money temporarily in the bank.

"I have also had an addition to my family since I last saw you by an addition of another daughter on October 29. Thus it has pretty nearly put me at the head of the Class in this respect as I now have one boy and four girls. If there are better men, I'd like to know who they are.

"Before the recent meeting of the Technology Club of Rhode Island, Saul Makepeace had us come to his house for inspection first, if you know what I mean. Apparently we all passed muster for we arrived safely at the Club although a little late and perhaps a little boisterous. I see the Stewart twins occasionally. They both seem to be coming along very nicely. I have in preparation a letter to be sent out to the members of the Class relative to class dues and will send it along to you or to the Alumni Association for mailing to the Class as soon as it is ready."

Saul Makepeace amplifies Hovey's report on the recent Technology dinner as follows: "At its first meeting of the

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year the Technology Club of Rhode Island had a dinner at the Agawan Hunt Club and Professor George Owen told us of the 1929 Fishermen's Races at Gloucester. As usual, '16 had the largest delegation of any Class; H. T. Freeman, E. S. Parsons, W. S. Stewart, and C. S. Makepeace. Between courses Ed Parsons and Hovey Freeman were overheard boasting of the size of their respective families. The score is now tied as each of the proud fathers was recently presented with an additional child bringing the total up to five. Ed's latest is a boy and Hovey's is a girl. Walt Stewart is still a bachelor."

When I used to make trips out West I frequently saw Ed Weissbach at Cincinnati. He is still associated with the Richardson Company at Lockland, Ohio, as chief engineer. Ed writes as follows: "Mrs. Weissbach and I had a very pleasant trip East this summer. We drove up to Boston via Cleveland, Rochester, Syracuse, Albany, Pittsfield, Worcester, and so on. The drive from New York State into Massachusetts with the view into Lebanon, Mass., was as fine as anything we have ever seen. In Boston we saw the usual sights, but as no one seemed to be in town, we soon drifted down to Cape Cod. We returned home through Hartford, Tarrytown, Newark, Trenton, Philadelphia, and Wheeling, W. Va. I had always thought a bus trip through the Alleghenies would be enjoyable, but after the way I saw them climb the mountains I decided I would take my own car or the train. I was in New York later in the summer and had lunch with Ed Barry. He looks fine and showed me a picture of his two boys who certainly are husky lads. Ed commutes from Dobbs Ferry.

"Vert Young and some of his organization were at our factory some time ago. Vert is now Vice-President of the Gaylord Company of St. Louis, but you probably know this anyway. Another classmate in M. W. Bliss came in the other day. Bliss was in Course VI at the Institute and was only with us from 1914 to 1916; as a result I never knew him in Boston. We knew several of the boys in common. He asked after Stimets, but I couldn't help him any. Bliss is now located in Cleveland. After the War he taught physics for a year at Amherst, then was with the Taunton Electric Company until he joined the Factory Mutuals some three years ago. He is now inspecting for them out of the Cleveland office.

"Our local Technology Club had a dinner and bowling last week. As the only '16 man present I made a poor showing with a score of 100. You may know what rotten bowlers we are as I finished next to the high man."

I am sorry to report that Paul Buxton has been laid up with a serious illness. However, he is now on the gain and is able to send in the following information on his activities: "There is no real reason why I do not have the time to write you a bit about myself since I am temporarily in the hands of a doctor overcoming the

1916 Continued

manifestations of streptococcus infection. After scaring almost all of my family but myself, I am now O. K. and taking a serum such as might do justice to a Lithuanian general. At the recent Alumni Dinner in New York I was reminded very forcibly that I am very much in arrears in my class interest, at least as far as has been displayed. Let me assure you the spirit is not lacking but has been quite submerged in the detail of helping in the management of a machine tool plant for the past ten years. Now I am engaged in trying to put over a rubber substitute made principally from oyster shells. I hope this will guide you a bit to work on and for records I will add that I have two youngsters, four and eight."

We all remember well Arvin Page's star performance on the golf course at our last Class Reunion. Arvin is still located at Winston-Salem, N. C., with the Bahnson Company. He writes as follows: "I have your very illuminating letter of December 11 and I will do the best I can to help you out although I cannot supply you with much ammunition. As far as the family is concerned I can report no progress since my last report made about four years ago. I am still engaged in the humidifier business, when there is any, and I see no reason for a change in the near future. There are so few members of our Class in this section of the country that I do not often run across any of them, except Bill Thrasher who really does not claim '16 as his Class, but who was with us for a couple of years. He is nominally assistant to the Commissioner of Public Works, which means he has all the work and not much of the credit incidental to the operation of the municipal government. Bill has one boy who is not quite ready to enter the Institute and he reports that he has plenty of work, which is more than some members of the Class can say."

"Last June I saw Chet Lewis at a state engineers' meeting. He also has a future prospect for the Institute. He is conducting a consulting engineering business in Greensboro and seems to be prospering. Last September I was in Boston for a couple of days but as I had many things to do, I did not have an opportunity to look you up. I will do so next time. On the way back here I stopped at New Britain and saw Judd Vile. He is busy trying to sell more than the production department of the Corbin Screw Corporation can make. He also has one son, in addition to a Cadillac."

Santy Claussen has kindly sent me the following dope on two of our classmates who are associated with him in the Bemis Bag Company. Thomas W. Little was married to Miss Margaret D. DeRonge on June 18, 1918. They live at 27 Walker Street, Cambridge, and have two children, Thomas W., Jr., aged eight, and John B., aged five. Tom was a Captain in the Officers Reserve Corps and assigned to duty both at the Springfield Armory and in the Ordnance Department in Washington. He is assistant to the Treasurer of the Bemis Brothers Bag Company and second in charge of the company's jute

department, located in Boston. His position is, of course, of an executive nature and is both varied and interesting. His office controls the purchasing of our jute and burlap supplies, which in itself is quite an order for any man, in view of the fact that we are probably the largest importers and consumers of burlap in the United States. The tonnage of such goods imported from India alone is so great that he is thrown intimately in contact with the entire shipping situation, that is to say, with respect to ocean rates, marine insurance, contracts with international shipping lines for freight bottoms, and so on. He spends most of his week-ends at his summer home in South Lyme, Conn.

Dick Hunneman was married to Miss Agnes Akeson in 1924. They have three children, John Richard, aged four, Conrad Champney, aged three, and Ann Madeleine, aged four months, and they live at 1 Ingalls Street, Woburn, Mass. Dick was a first lieutenant in the Infantry in the Third Division, and probably saw more active firing line service than any other individual in our Class. If the following record does not prove it, I should like to hear from others who could beat his record. He was active in the Aisne-Marne defensive, in the Marne-Vesle offensive, in the St. Mihiel drive, in the Meuse-Argonne drive, and was almost fatally wounded on October 11. He has fully, and fortunately entirely recovered from the effects of this wound. He is in the jute department of the Bemis Brothers Bag Company and remains the slipstick champion of the office. Dick is the boy that can always solve problems in higher mathematics when they arise.

It was my good fortune to receive again a most beautiful hand made Christmas card this year from Irving McDaniel. Mac is apparently enjoying his new assignment as is evidenced by the following: "I have been meaning to write you a real long letter but never seem to get the time. I am living on Cavite, P. I., about ten miles from Manila, and will be here for about another year and a half. I have a wonderful assignment — as aide to Governor-General Dwight F. Davis — and in my spare moments I am designing ships for the Filipino Government, lighthouse tenders, revenue cutters, a small cable ship, and so on. It is very interesting out here, especially at this time and we hope to make several trips. Next spring we expect to make Japan and China and next summer Java and way points. We are also hoping to come home through Suez and take two months for leave in Europe, so with all that in view, we are enjoying our cruise out here, but it is hot even for the tropics. I wouldn't care to be in business here or to have to live here. I never see any Technology men and if any of the gang go through Manila be sure to tell them to radio from the ship they are on."

I have just learned that Jack Stafford is also located in the Philippine Islands. He is associated with H. A. Burgess, 208 Pacific Building, Manila. I have been

unable to find out what he is doing but have written him and hope to report further in an early issue.

Jeff Gfroerer is sailing on December 27 for Germany with Mr. Reuter, President of Olds Motor Company, and two or three others. Mr. Reuter is taking charge of the Opel unit of General Motors and Jeff expects to be in Germany for five or ten years. As recently reported, Jeff is assistant to Mr. Reuter and I look forward to his having full charge of the Opel plant at no very distant date.

Bill Farthing wrote me recently with appreciation of the increasing number of Class Notes. If the rest of the Class would only somewhere near approach Bill's enthusiasm, we would be taking up the whole Class Note section every month. Bill reports that the following were present at the New York Technology Dinner of December 2: "Mr. and Mrs. George M. Maverick, Mr. and Mrs. E. H. Barry, Bill Shakespeare, Jack Burbank, Jimmie Evans, Lawrence Dellabarre, Tom Holden, Paul Buxton, Walt Binger, Bill Kneiszner, and myself. Everybody had a good time for it was a most interesting affair."

When I was over in New York recently I happened to run into Jim Rawlson in the I. R. T. subway. Jim is associated with the New Jersey Manufacturers Association, engaged in working men's compensation insurance. He reports one daughter and wishes to be remembered to the rest of the Class. — Several recent changes of address have come in. — HENRY B. SHEPARD, *Secretary*, 269 Highland Street, West Newton, Mass. CHARLES W. LOOMIS, *Assistant Secretary*, 7338 Woodward Avenue, Detroit, Mich.

1917

The position of the National City Company was strengthened some time in the recent past by the acquisition of Augustus P. Farnsworth, who is now a member of the company's industrial department.

The latest word from Penn Brooks, who has had a very serious appendicitis operation, is that he is getting along nicely, thank you. The Town of Westbrook, Maine, has therefore returned to its normal state of mind, knowing that both of its favorite sons are again in good condition. There has not been any recent question about the other, the well-known Rudy Vallée. It is rumored that Rudy offered to carry on for his fellow townsman if Penn were unable to return to Sears Roebuck promptly and Penn has agreed to reciprocate if the need arises.

Mr. and Mrs. Walter F. Pond announce the arrival of twin sons on November 27. — Deac Young recently left Saint Paul for Los Angeles. We hope for some news from him soon as to just what he is doing at the present time.

And now Doug McLellan. How he escaped the clutches of the more dangerous of the species so long is a mystery, unless it be that Boston is a safer abode for bachelors than Los Angeles. The item was in the Boston *Evening Transcript* and must be correct: "Mr. and Mrs. Clifford

1917 Continued

Hale Buckingham, formerly of Pittsfield, and now of La Jolla, Calif., announce the engagement of their daughter, Miss Florence Buckingham, to Douglas Hull McLellan, son of Mrs. McLellan of Los Angeles, Calif., and the late Joseph Wheeler McLellan. Miss Buckingham was graduated from Miss Mills's School and then attended Miss Hall's School at Pittsfield until she entered Miss Porter's School at Farmington, Conn. Mr. McLellan, who formerly resided in Boston, is a graduate of the Institute in the Class of '17. During the World War he served with the Naval Air Forces. He is now an architect in Los Angeles. The wedding will take place in the late autumn, upon Miss Buckingham's return from abroad."

The "Army and Navy Register" and the "Official Army Register" may soon be published as supplements of The Review. The following notes appeared in them recently: "The rapid advance of scientific research and study is gradually reducing to the minimum any hazard that is involved in flying. Under the supervision of Lt. Hegenberger, of Hawaiian flight fame, the human element in the navigation of aircraft — with its susceptibility to fatigue — is to be replaced by devices harnessed to earth induction compasses. In his effort to perfect this device, Lt. Hegenberger will have at his disposal the instrument boards from *The Spirit of St. Louis*, Lindbergh's plane, and from the C-2, the ship Maitland and Hegenberger flew to Hawaii. It is a matter of but a few years before transoceanic planes will be equipped with devices harnessed to the earth induction compass, which will keep the plane directly on its course at all times. A navigator having such equipment at his disposal will only have to read his maps, set his compass to a certain position, and fly for hundreds of miles before again changing the position of the compass for another change in direction."

"A new device which takes over the controls if a plane swerves off its course is in course of development. This mechanical device, operated by wind and gravity, it is claimed, will keep a plane on its course even more exactly than the skilled hand of an experienced flyer. This device consists of a pendulum pivoted at the center of gravity of the plane, which swings against a carbon resistance plate whenever the plane tips. There are four plates, thereby providing a different contact for a right, left, front, or back tip. When the pendulum is swung against one of the plates, a motor is started which operates a device to bring the plane back to a normal position."

Leslie R. Groves, formerly of the Class of '17, it will be remembered, left the Institute in 1914-1915 to enter West Point. "On Monday afternoon, October 7, a review of the First Engineers took place at Fort DuPont, Del., in honor of First Lieutenant Leslie R. Groves, Jr., corps of engineers, departing company commander of headquarters and service company, First Engineers. Lt. Groves, together with other company command-

ers, reviewed the troops. This has long been a custom in the First Engineers, and has probably established itself for all time. Lt. Groves, now in command of Company A, First Engineers, left the post for duty in Nicaragua on October 11. In the evening of October 7 a dinner dance was given at the officers' club in honor of the departing officers and ladies of the post."

Captain L. E. Schoonmaker, C. A. C., United States Army, and Mrs. Schoonmaker are the proud parents of a daughter, Gladys Dorothy, born at the Walter Reed General Hospital in Washington, D. C., on October 7.

Captain William Lohmeyer, Jr., died on August 26 according to the "Official Army Register," he was born on February 22, 1895. Soon after he began a military career, he received a B.S. from Virginia Military Institute in 1916 and a B.S. from Technology in 1917. He was retired for disability from wounds received in action. He was made a Second Lieutenant in the Corps of Engineers on October 16, 1917, and First Lieutenant and Captain (temporary) on the same date. He was made permanent Captain in January, 1919, and was retired on May 25, 1920. —RAYMOND S. STEVENS, Secretary, 30 Charles River Road, Cambridge, Mass.

1918

The 1930 record begins with the discovery that what makes the world go round is the partial derivative of x with respect to y .

From New York, via Mal Eales, comes news of their December luncheon at which some sixteen manly graduates gathered including Bill Foster, Walt Robertson, Pete Harrall, Sidney Judson, Phil Shelton, Mike Malley, Al Vought, Cliff Bellis (on for the Power Show), Clarence Fuller, Rus Mumford, Bill Costelloe, Granny Smith, Nat Krass, Pete Sanger and Charlie Tavener. Considering that such old standbys as Ken Reid, Sax Fletcher, Jack Kennard, and Ev Rowe were unable to show up, we call it some turn out.

Phil Shelton, being a good old electrical engineer, has gone into the horticultural business. He has a farm at Fairfield, Conn., where, says Mal Eales, he's laying out evergreens in resistance boxes and shunt wound arrangements.

Granny Smith is flying his plane a good deal and selling aviation insurance on the side. Al Vought is with the Standard Oil Company in Elizabeth, N. J. (They do a good job on greasing your car there. The Class Secretary found complete satisfaction on three occasions last summer.) Charlie Tavener is production manager for Camco which, being derived from the ancient Egyptian, has something to do with automatic vending machines with a talking attachment to say a kind word intended to cheer one after a purchase. Al Murray has left Boston and is now with the Jenkins Television Company in Jersey City — just beyond Hoboken where the brew begins.

Mal himself has been redecorating his house, and wonders why Course IV didn't offer something on easy methods of wall papering. After an exhaustive (physically) study he has been able to make the pattern match twice on the southeast wall.

Richard Rimbach sent us copies of the two magazines he is working on. Says he, "The first position offered to me, after leaving the army, in the field of civil engineering, was one that was not sufficient to keep me in smokes. I then decided to start laboring in a steel mill. After nine months at the Illinois Steel Company at South Chicago, I accepted a position as chief metallurgist for the Standard Steel Car Company. It was three years later that I left this company to go with the Jones and Laughlin Steel Corporation, and after obtaining the experience I desired with this plant, I transferred my activities to the Union Switch and Signal Company. During this period, I was lecturing in metallurgy in the evening school of the Carnegie Institute of Technology, in the meantime translating a book on the theory of rolling steel and another on metallography from the German."

"At this time I was working on an idea pertaining to the publication of a periodical for engineers confining its editorials to measurements. After two years with the Union Switch and Signal Company, and two additional years with an instrument company, the first issue of this publication entitled, "Instruments, Industrial and Scientific" appeared in January 1928. In July 1929 I was asked by Francis M. Turner, President of the Chemical Catalog Company, to assist in a publication entitled "Metals and Alloys," devoted to the advancement of scientific metallurgy. In order to continue my service to engineers, the Instruments Publishing Company, recently opened a technical book shop in the Pittsburgh district."

A card which we anticipated from its size, color, and date would say "Merry Christmas," informs us that after the turn of the year the architectural offices of Royal Barry Wills will be located at 3 Joy Street, Boston. Bill always makes us think of a piano — square, upright, and grand.

Various bits of choice conversation flitted over the teacups at the Boston luncheon on December 16. Asher Joslin's dog has been quarantined for biting somebody. He learned the trick from young David J. who bites the dog's tail. Now that Don MacArdle has his own noise-producing equipment in the form of a daughter ten months old, he has moved to Melrose, away from the explosions of the Beacon Oil Company. On October 20, Nancy B. came along to Mr. and Mrs. Lovejoy Collins. Eddie Rogal's own cousin is private secretary to Ramsay MacDonald. (No Mayflower furniture returned to England.) Although he spends most of his time in a sleeping car, Jack Hanley of the Factory Mutual is located back in Boston again. Further news of him is lacking.

1918 Continued

Somebody says that Earl Collins's Sally, born July 9, 1928, has never been acknowledged in these columns. One other element remains — can you guess it — the usual announcement. Mr. and Mrs. N. A. Pelonsky of 8 Egremont Road, Brookline, announce the engagement of their daughter, Miss Selma Pelonsky, to Max Seltzer of Lexington. Miss Pelonsky is a graduate of Smith College and is widely known in musical circles. — F. ALEXANDER MAGOUN, *Secretary*, Room 5-328, M. I. T., Cambridge, Mass. GRETCHEN A. PALMER, *Assistant Secretary*, 51 Houston Avenue, Milton, Mass.

1919

It will probably be of interest to '19 men to know that John R. Rowe IV, who is associated with E. J. Hergenroeder of Pittsburgh, has received honorable mention from the North Atlantic States regional contest of the 1929 National Better Homes Architectural Competition. For those who may be contemplating building a small home, we quote from the Buffalo, N. Y., *Cour-Express*: "The designers, describing their plan say, We selected this from other studies on account of the convenient arrangement of rooms that includes all the requirements of comfortable living, with living, dining, and sleeping rooms having a view of a garden toward the south and east. The house is planned to front to the north. Circulation is good and every square foot is placed where it is most desired, with no loss of space. We chose the English style for the exterior for the pleasing effect of the low eaves with the sharply rising roof lines that would give a harmonizing appearance in any residential section. Containing six main rooms and two baths, exterior walls of stucco on metal lath are recommended, although common brick or stone could be used. The high ridge of the asbestos shingled roof is terminated on either side by massive brick chimneys covered with stucco. The inviting entrance doorway is thrust forward in a low gable and is lighted by an iron lantern. A convenient, electrically lighted coat closet is in the entry, and a lavatory is situated off the hall. From this hall there is a pleasant vista across the bottom of stair into the living room, the window-floated fireplace on far wall being the focal point. A door leads onto an unroofed terrace which may be floored with brick, tile, or slate. The dining room is easily reached from the kitchen, living room and terrace. The kitchen may be entered from the front and side doors; it is compact and completely equipped. A breakfast room with folding table and benches is available for sewing, ironing, and other purposes between meals. Three bedrooms and two baths on the second floor are reached by a straight stair. The master's chamber has a fireplace. Each room is but a step from a bath."

We spent a pleasant lunch hour with Marshall Balfour VII a few weeks ago. Many of you may not know that after leaving Technology, Balfour completed a medical course at the Harvard Medical

School. For the last several years he has been with the Rockefeller Foundation. He was located for some time in Indianola, Miss., where he was engaged, among other duties, in the training of health workers. He is now located with the Rockefeller Foundation in New York City where he is one of the assistant directors. Balfour has delivered a number of papers on medical matters and we have before us a paper entitled "Training Health Workers" which is a reprint of the *New Orleans Medical and Surgical Journal*, and another entitled "Prevalence of Malaria in Humphreys and Sunflower Counties, Mississippi, in 1927-1928."

Classmates are such modest fellows that information concerning them arrives in my hands in round-about manners. The D. Van Nostrand Company, Inc., has recently sent me a number of fliers on technical books and among them is one entitled "Transmission Networks and Wave Filters" by T. E. Shea. We spent an hour or so with Shea only a few weeks ago and we talked over matters in general but no mention did he make of this 512-page book which any of you can buy for \$6.50.

An interesting article entitled "Glass That Glows in the Dark" by Donald C. Stockbarger appeared in the December *Tech Engineering News*. The article concerns the permanence of special glasses. Stockbarger, a Course XIV man, is now Assistant Professor of Physics at the Institute.

Classmates also keep moving around so that it is very difficult to keep an up-to-date list of addresses. Frederick J. Rasmussen XIV recently moved to 194 Sherman Avenue, Glen Ridge, N. J. D. A. Lundquist XIII is now living at 8012 Saratoga Avenue, Silver Spring, Md. Gene Smoley can be reached at 479 Irvington Avenue, Elizabeth, N. J. T. E. Shea is living at 245 Springfield Avenue, Rutherford, N. J. Any of you fellows who have changed your addresses recently would oblige the writer very much if you would send us your new address. — WILFRED O. LANGILLE, *Secretary*, 144 Acme Street, Elizabeth, N. J.

1920

Your committee for the Tenth Reunion has twice assembled in formal conclave and plans for the great Reunion are well under way, although not sufficiently advanced to permit me to give you details. Our first meeting was at Walker and was attended by Chairman Cofren, Ed Ryer, Scottie Wells, Ted Hobson, Hank Pierce, and the Bugbee twins. It was quickly decided that the Reunion should be held in conjunction with the All-Technology Reunion which, happily, comes at the five-year period of our own important Reunion, to give a powerful added inducement for heavy attendance. In addition this year comes the big Tercentenary Celebration of the City of Boston so that, all in all, this Reunion will be worth coming miles to attend. The dates will be June 6 and 7. You may be sure we will give you full details and ample time. This will be a big affair, not to be missed.

Our second committee meeting was held at the Hotel Lenox of hallowed memory, and Ed Murdough, Jim Gibson, and Ken Akers were among those present. As stated above, plans are not sufficiently matured to make a formal announcement at this time, but we can say that things are shaping up in such a way that we can positively guarantee a red hot Reunion.

A welcome note from Chuck Reed contains the interesting news that he has been elected chairman of the Lacquer Institute, a newly formed trade association comprising manufacturers of seventy-five per cent of all the lacquer sold in this country. It is a signal honor to have one of our classmates at the head of such an important group and Chuck deserves our heartiest congratulations. Chuck mentions that he has seen Albion Doe and K. B. White in Cleveland recently where they were attending a convention of the Society of Industrial Engineers. He has word also of Monroe Shakespeare. He was likewise in Chuck's home city recently.

A note from Hank Pierce tells me that, according to Ernie Huntress, Al Young passed away recently. This is a sad surprise and Al will be mourned by many '20 men, although he is listed as a '21 man.

The Boston *Evening Transcript* contains an interesting announcement of the engagement of Miss Clotilde Féré to Alden Miller, formerly of Medford and now of Santa Barbara, Calif. Miss Féré is a concert flute soloist and pianist and a member of the Class of '31 at the University of California, Southern Division, where she is specializing in music. Dusty is now sales manager of the Santa Barbara district for the Johns-Manville Company. Please accept the heartiest congratulations of the Class, Dusty. — HAROLD BUGBEE, *Secretary*, 9 Chandler Road, West Medford, Mass.

1921

Since our discourse on one Professor Robert E. (Tubby himself) Rogers in these columns last month, entitled "On Rogers Steps to Fame," it appears that neither his advice nor his request is enjoying instant effect. What with Rogers freshmen unsnobishly electing Sophomore officers and '21 men conserving postage on letters to their Secretaries, the hard winter promises to continue. (Another installment next month under the heading "Says Stenos Should Marry Boss.")

Despite the Wall Street pyrotechnics a portion of the New York gang took the opportunity afforded by the December Alumni banquet for a reunion. Among those present were: Irv Jakobson XIII, Warrie Norton XV, Jim Parsons XV, Dick Spitz X, and Bob Whitehouse XIV.

What with the scarcity of facts or fancies for this column the Man With the Whiskers and the Magnifying Glass has been pressed into emergency service. Finding negative resistance in the person of Brother Oehm he learned that M. C. Rose XIII is a member of the engineering forces of the Chesapeake and Potomac Telephone Company in Washington, D.C.

1921 Continued

Mel was married since our last note of him here and he is now the proud daddy of two children. Next Dan Gurney told the Man about P. N. Anderson IX-B who is superintendent and general high factotum of the Empire Case Goods Company of Jamestown, N. Y. Under the heat of the powerful Magnifying Glass our other Rose blossomed forth this winter and we present Edwin L. VI-A as assistant engineer of the United States Indian Irrigation Service, Coolidge Dam, Ariz. D. M. Burckett VI has also been located. Doug is assistant engineer for the Great Northern Railway Company and his address is 310 King Street Station, Seattle, Wash. J. R. Carter VI still hangs his hat in the office of Jackson and Moreland, Boston. T. D. Dutton VI is with the Long Lines Department of the American Tel. and Tel. Company, Bourse Building, Philadelphia, Penna. — RAYMOND A. ST. LAURENT, *Secretary*, Rogers Paper Manufacturing Company, South Manchester, Conn. — CAROLE A. CLARKE *Assistant Secretary*, 463 West Street, New York, N. Y.

1922

We have been fortunate in receiving an exclusive article which we are glad to present in this issue. It reads as follows: "At Chicago there has been created a very interesting organization known as the N. A. T. A., which styles itself as the Motor Club of the Air. N. A. T. A. really means National Air Travelers Association; its objective is to serve as a clearing house for aviation information and to advance the personal safety and convenience of the air traveler and pilot.

"Very complete files containing statistical and technical surveys are maintained by this association compiled from reliable sources throughout the world and much other information touching upon aircraft construction, airports, aviation insurance, aviation laws, commerce regulations, and meteorological data, the assembling of which and the analysis thereof requiring considerable technical knowledge and mechanical understanding.

"C. Lauren Maltby, who is also Secretary of the Technology Club of Chicago, is Secretary of the National Air Travelers Association and is its statistician. Mr. Maltby, a member of the Chicago Bar and a patent attorney by profession, has been making a very close study of civilian aeronautics ever since his flying trip from Chicago in company with Charles P. Rockwood '01, in May at which time they flew with pilot Paul Meng to represent the Chicago Club at the annual meeting of the Technology Clubs Associated then held in Pittsburgh."

You will be interested to know that Mr. and Mrs. Walter H. Adams have announced the engagement of their daughter, Miss Elizabeth Adams, to Dan Reed, now divisional superintendent of the Wickwire Spencer Corporation in Clinton. Irwin B. Cassidy is engaged, too. The lady who will be Mrs. Cassidy is Miss Joyce Lee Ganzel of Westfield, N. J.

— Leonard Siff has written a book called, "The Theory of Relativity" and has another in preparation. He is associated with Lehman Brothers of New York City.

The following announcement is given as it appeared in the Boston papers on December 7: "Mr. and Mrs. Harry Johan Carlson of Newton Center announce the engagement of their daughter, Miss Catherine Cornforth Carlson, to Eric Francis Hodgins, son of Reverend and Mrs. Frederick B. Hodgins of New York City. . . . Miss Carlson is a graduate of Smith College in the Class of '24, and is now an editorial associate on the staff of The Technology Review at Technology, with which she has been connected for three years. Her father, Mr. Carlson, is a prominent Boston architect, sole member of the firm of Coolidge and Carlson, and is a Life Member of the Corporation of the Institute.

"Mr. Hodgins was graduated from Technology in 1922 and is a member of Pi Delta Epsilon and the Walker Club. He has been associated with publishing activities since his graduation, as managing editor of The Technology Review and as assistant to the President of the Institute. Until last September he was editor of *The Youth's Companion* and he is now associated with the McCall Publishing Company in New York. In Boston he is a member of the St. Botolph Club." The man, who has borne the troubles and cares and worries of our mighty Class for these many years is thus made happy. We join in wishing him success and prosperity. — RAYMOND C. RUNDLETT, *Secretary*, Daniel Low and Company, Salem, Mass.

1924

When you start to read this your mind may not go back to just before Christmas when it was written. Please let me take you back there just to establish a reason for the brevity. The Course Secretaries in addition to your Gensec all find themselves in the midst of preparations for Christmas and the New Year.

I have a card announcing the arrival on December 7 of James Waddell Manning, son of Shorty Manning.

May I suggest that you help out the Course Secretaries by sending in all the scandal you know? Or have your wife (those of you who are married) write and tell me what a great big executive her husband is. Bet you I'd get that news in quick. — HAROLD G. DONOVAN, *General Secretary*, 139 Girard Avenue, Hartford, Conn.

COURSE II

This being our first appearance in these columns for the current year, we find some scattering information which has come in to your Secretary, exclusive of everything which took place at the Reunion last June. Our General Secretary has very well described this gathering, but of course we could not expect him to bring out the Reunion of Course II as it deserves to be. I am taking considerable responsibility upon myself in attempting

to vividly describe our part, and in case I omit any important details, which I do not remember or did not see, I ask you to excuse me. There may have been some members present who took a very large part in the Reunion but will be overlooked in mentioning the names of those who were there. You can't expect a Secretary to be running around taking notes to get a report which will be exact in the last detail. Who wants to attend a Reunion and work all the time? I don't and I didn't.

Dick Bushnell was able to tear himself away from the Stone and Webster organization for part of our festivities. Dick is doing engineering work on some of their large power plant developments and claims that the work which he is doing is somewhat more advanced than Eddie Miller's course in power plant design. Ed Hanley came from Schenectady, N. Y., and claims that the main reason for his being in Boston that week-end was the Reunion. However, we noted that he was not able to give undivided attention to the Reunion, and we were suspicious that there might be feminine attractions in Boston greater than those in Schenectady.

The most corpulent gentleman at the Reunion was Mr. Carroll Dunn who has reached well balanced proportions and, when one remembers his height, the resultant estimated weight is large, and Carroll's statement would verify the most conservative estimate. Carroll is in the automobile business in Haverhill, Mass. Ray Dorr stopped in for a few moments Saturday evening.

Bill Croft is an instructor at Dean Academy. Perhaps I have his title wrong and maybe we should address Bill as Professor. Whether he is an instructor or a Professor he is the same old Bill.

Ray Hamilton is a superintendent of one of the Linde Air Products Plants at Niagara Falls. At the time of the Reunion I was engaged in the fixation of atmospheric nitrogen, and it was our common idea that we might get together and Ray's company take the oxygen and mine the nitrogen, thereby using much smaller total quantities of air and leave more for the people to breathe. Inasmuch as I am now connected with the Solvay Process Company, I think we will have to abandon the project for the present.

Bill Ridge is with the Jones and Laughlin Steel Corporation and fortunately was able to spend considerable time at the Reunion. — Bob Reid furnished us with his usual amount of wit and even attempted some sailing, which he was able to do as well as he can cox a crew. Bob is the representative of the American Blower Company at Hartford. Bob claims to have fans to suit every need and there is even no longer any excuse for the ladies having an odor in the kitchen if they will see Bob first. — Among others present at the Reunion were Don Moore, George Lindsay, and Clarence Redden.

The only wedding we seem to have to report on at this time is that of Miles Cary to Miss Virginia Bernard Graves on November 13. We all join in extending

1924 Continued

them our hearty congratulations and best wishes. — FRED S. HUNGERFORD, *Secretary*, Solvay Club House, Solvay, N. Y.

COURSE X

Thomas Anthony O'Brien and Miss Helen Selvey were married June 29 in Hancock, Md. Tom was in the Patent Office when all this started and now he is working for Allied Chemical and Dye Company as a patent engineer, in New York City. They are living in Brooklyn. O'Brien has become quite an after-dinner speaker as I found out at a couple of the '24 dinners in New York. Congratulations from the Class, Tom.

Margaret Joan McCoy was born November 17 to Mr. and Mrs. John Teubner McCoy, at Elizabeth, N. J. Great work, Jack. She is just the right age to play with our Joan. Jack is with the Tidewater Oil Company at Bayonne, N. J. — WILLIAM B. COLEMAN, *Secretary*, 52 Liberty Street, Kearny, N. J.

1926

For two years all efforts of Der Konvergenzpunkt to establish a secretariat for Course VI have come a cropper but, happily enough for VI-A, a worthy and interested secretary has been procured, or more accurately has been inveigled into the secretaryship. Ben Richardson was thoughtful and kind enough to send in a letter giving such news as he had collected about VI-A men. Der Konvergenzpunkt immediately began to operate with an expectant gurgle and offered the Course portfolio to Ben, insisting with eloquent and persuasive arguments that he accept it for the good of the race and the happiness of the Course. He did. The entire group of '26 Secretaries bespeak for him the coöperation of all men in his Course and welcome him to the confraternity of secretarial "goats" — as he himself put it. His first communication follows this introduction.

Der Konvergenzpunkt received another Christmas surprise in a communication from Ronald J. Martin, containing intimate and variegated details about Course VI men. He presents it with great pleasure: "My old roommate, Elmer F. Knight, was taken suddenly ill last May while living in East Orange, N. J., on the same street with myself, and after about a month in the hospital there, was sent home to Athol, Mass., by ambulance and has been kept in bed ever since. The malady which he has is unknown and is in the form of a tropical fever and will have to run its course. I ran up and saw him about a month ago and he was very much improved but still in bed and will be for some time. His spirits are high and he hopes to be back at work in the New York Telephone Company by next April or thereabouts. He has recently been moved to his wife's family's house in Orange, Mass., and I'm sure he would appreciate any letters from his old pals at the Institute (but be sure and make them optimistic letters). Perhaps you didn't know that he was married the day after Labor Day, 1928.

Now, how about putting in a little note about myself? I was married June 9, 1928, and have lived happily ever since. Hazel T. Fairman of Thompsonville, Conn., was the unlucky girl. I was with the Commonwealth Edison Company of Chicago from graduation until February 1927, when I obtained a position with Jackson and Moreland and have been here ever since — or rather hopping around the country. I spent a year in Hoboken, or rather East Orange, on the electrification of the Delaware, Lackawana and Western Railroad. A consulting engineer's life is similar to a nomad — roaming about from place to place and you know what the proverb says about a rolling stone — well, they don't get mouldy either.

Ralph Hammar VI-A eloped and was married soon after Elmer stepped off — that may be news as I haven't seen it in *The Review*. Also Charlie Kirsch was married about the time I was. — John E. McMaster VI was married right after graduation and is now living in Arlington, working for the Cambridge Electric Light Company. He has a daughter born last May. — Earl McMahon is with the Public Service of New Jersey. I used to see him a lot while I was down there. Also Howard Lane is in New York with the Long Lines of the American Tel. and Tel. Company. I move so often that I don't hear from the gang very often but would appreciate any news at the office of Jackson and Moreland, Park Square Building, Boston, Mass."

Advice has just been received of the marriage of Allen Bassett on September 4, in Bridgewater, Mass., to Miss Barbara Bradshaw Aldrich. — JAMES R. KILLIAN, Jr., *General Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

COURSE IV

Little news has been reported in the past month. I have heard that Leon Zaitzevsky is teaching at the University of Southern California as well as working in a Los Angeles architectural office, and no doubt his calm and steadfast genius will be an inspiration to all students coming within the sphere of his pedagogic activity. That redoubtable designer John Frederick Stonewall Jackson George Washington Buenz has failed — failed lamentably to keep me informed as to his endeavors, recent or otherwise. Failures also in this regard are Hogg, Butler, Pirola, Roorda, Sapienza, Brown, Stanley, Brunton, and a host of others, including all of Option II. Know ye, therefore, all Course IV, that little credit shall be given for worthy enterprise or deeds of valor unless your renowned and well-meaning Secretary is fully informed of such enterprise and such deeds. — ALAN K. LAING, *Secretary*, University of Cincinnati, Cincinnati, Ohio.

COURSE VI-A

What news I have been able to pick up from time to time is here included. The other night four of us met at the supper table to converse of the past and present,

and during the session the names and occupations of some of the boys were brought to light from obscurity. The gathering consisted of Meredith Brewster, R. A. Cunningham, Ed Perry, and myself. Brewster is some sort of an expert on welding for the General Electric, while Cunningham knew about diamond mines and Wall Street as he was employed by the estate of Mr. Grant of the chain stores fame. Ed Perry is a chaser of the decimal point in the Telephone Company, working in the engineering department, and I am in charge of the service department of the Electrolux, Inc., which by the way is not directly connected with the Electrolux-Servel, Inc., makers of refrigerators. So with the diverse experiences of each our evening passed all too quickly but very pleasantly.

We were very sorry not to have Frank Grueter with us somewhere a power line was getting too friendly with a telephone line so the N. E. L. A. sent Frank to measure stray things and look wise. Yes, Frank works for the N. E. L. A. in their engineering department.

Following are briefs of various members of the VI-A gang whom we have been able to trace during the past year. Jim Crawford is with the Pennsylvania Bell in Philadelphia. Bob Conly is also in Philadelphia, but is with an insurance company. Davidson is reported as married and living in Harrisburg, Penna., while Grossman is in a power plant near Wilkes-Barre, Penna. Hi Datesman is with the New York Telephone here in New York. Joe Fannon on last reports was with Stone and Webster in Boston. Also in the Stone and Webster organization is one Bill McInnes who is supposed to be in Savannah and Bob Sherwood who disappeared toward Washington State. Russ Meyerand, who was ahead of us, is also with Stone and Webster in their engineering department and doing well, we understand.

Nat Gada was seen in Chicago where he was telling the city fathers of the benefits of traffic signals for the General Electric Company. Ralph Hammar is supposedly turned lawyer, being attached to the patent department of the General Electric in Washington. Our old friend, Phil Richardson, who was with us some of the time in VI-A after graduation, taught mathematics for a time in Colby but has given this up to study for his Ph.D. at Technology under Dr. Rowe. He always hankered more for medicine than mathematics, so I guess he is enjoying himself.

This seems to be the sum total of the scandal at hand. I hope some of the rest come forth from oblivion if only to tell us that the foregoing is incorrect. — BENJAMIN P. RICHARDSON, Jr., *Secretary*, 29 South Second Avenue, Mount Vernon, N. Y.

COURSE X

Well, the original stillson sluggers and wrench wrestlers are back at the Bond after months of sewer building, pipe laying, and gold digging. Ed Gohr crashed through with a lot of red hot

1926 Continued

dope about the gang and deserves first mention. Ed is still with Standard Oil of Louisiana, designing short measure gasoline pumps, frictionless oil, or perfecting fireproof grease for frying doughnuts. Whatever it is, Ed finds time to run up to New York now and then to talk things over with Wall Street. At the time of going to press, as we used to say when writing for *The Tech*, Ed and Polly are in the big city for a few months again. They were in Texas all summer, but our correspondent neglected to find out where they will pitch camp next.

We haven't heard from the Kentucky Colonel, Jim Offutt, for some time, but we understand that he is still with the United States Gypsum, holding down an important job in their research laboratory in "Duck, here comes a bullet" city. Jim seems to know the Toddling Town quite well and can dodge taxicabs and bombs with equal dexterity. By the way, when he was at the plant in Port Clinton, Ohio, he was also a racketeer, having been tennis champ for the season 1927-28 or thereabouts.

Charlie McCulloch, with Foster Wheeler Company in New York, spent some time in Olean, N. Y., Bayonne, N. J., and Tulsa, Okla. It was in Tulsa that Charlie saw things novel — Indians in blankets and Packard cars. Some talk of his going after a few squaws with big Indian oil well daddies, but he couldn't make them understand what he meant when he said he was a "big earl man from New York," so he gave it up as a bad job.

Walter has been with M. W. Kellogg Company, manufacturers of oil refinery equipment since returning from the sugar belt, fields, or whatever sugar grows in down Cuba way. Walter does design and proposition work and translates a little Spanish for the company on the side. He is at home in Elizabeth, N. J., with Kathlene (née Mahoney) and little Paul Alan. He's still backing Milt Work off the map when it comes to telling you about bridge.

Paul Mahoney, with Combustion Engineering since 1926, is now permanently located in the New York office. When off duty, it is easier to find him in one of the Russian night clubs than it is to find him at one of the many hotels where he is supposed to be living. Ed tells us that P. L. can usually be spotted in a crowd on Broadway because he always carries a newspaper in his pocket, but we aren't sure whether he buys it to see what the date is or how the stock market is slipping these days.

Cris Criswell is now with the Buffalo, Rochester, and Pittsburgh Coal Company as combustion expert. At least he's an expert at date making, as we have been informed that he had twenty-eight dates in as many nights in Minnesota. It must be the new blonde moustache we've been reading about. Cris travels quite a bit, but can be found at the Fraternity Clubs in New York when he hits the metropolis.

Yours truly has been with the development department of the Slater Mills, Inc., at Webster, Mass., since September 1.

After a couple of years with the Celanese Corporation at Cumberland, Md., and a couple of months with the United States Industrial Chemical in Baltimore, I retired to Hartford, Conn., for about five months. At present the company is sending me to the Institute for a special six weeks course in textile testing and research. Incidentally, I ran into Hoppie Hopkins of the "other gang," X-B, taking the same course. Hoppie is doing something important with Bigelow-Sanford Carpet Company.

Ed, Charlie, Paul, Walter, and I had a little reunion in New York last May. Cris was out of the city at the time and we missed him and Jim muchly when talking over our happy days in the Practice School. Ed writes of a get-together he, Charlie, Paul, and Cris had recently. Cris held the boys spellbound with stories of "Now when I was down in the mines," and by the time he had finished, it was too late for Ed to rave about Standard's oil, Paul about Combustion's new developments, and Charlie about the Indians in blankets.

We take this opportunity to advise all of our friends and competitors that Gohr's Potent Pretzels, Amalgamated, born in Buffalo at about midnight one day in June, 1926, are still oversold, but with increased production facilities and whatnot, there should be enough for everybody by the time we have the reunion of reunions in 1931. Wait until you see the Gohr's Potent Pretzel Company Houseboat on the Charles with every member of our gang playing quoits with our midget size pretzels and wearing our giant size waterproof (stock number 5641) pretzels as life preservers — just wait! — JULIUS B. GOLDBERG, *Assistant Secretary*, 125 North Quaker Lane, West Hartford, Conn.

1928

Although the present age is noted for rapidity of news dissemination, word concerning the marriage of Bill Woods III to Anna Grace Charney on September 25 at Houston, Texas, has just reached this office. Congratulations, Bill! You have the best wishes of the Class for many years of happiness and success.

Our Class Notes in this issue are conspicuous by their absence. More letters from you fellows is the only solution to the problem. — GEORGE I. CHATFIELD, *General Secretary*, Room 11-203, M. I. T., Cambridge, Mass.

COURSE I

We hasten to print combined corrections, apologies, and — as the season approaches as we write — resolutions. The resolution applies to information reaching us through the devious channels of rumor. To resolve not to print rumors would be a fatal blow to this column, but henceforth we shall exercise due care in giving them credence. Apologies are due Cy Meagher for the absolutely incorrect statement in the November Notes to the effect that he had lost his job with Barney-Ahlers due to slack times in the company. Nothing could have been more

erroneous; Cy is still very decidedly employed by this company. During the summer he spent much of his time on outside work. His address is 25 Prospect Place, Tudor Tower, Apartment 906, New York. Incidentally if McCarthy will send a bill for the postage on that special delivery he sent to Cy immediately after reading that the latter was out of a job, we will forward payment by return mail.

The biggest bit of news for the month was a card announcing the birth of Lois Lorrane Daytz on December 8. I know that the gang joins me in offering Al our heartiest congratulations. When I told Josephs this news he remarked that the baby's initials seemed to indicate that Al had decided that a college education was too arduous a method of obtaining a degree.

The Review would have to be printed as a weekly publication if we were to keep up with the changes in jobs made by some of the members of our Class. Clark's latest letter announces that he is now working with a contractor but neglects to mention any details. He adds, "Jack Luby, unless he has changed his job since November 3, is with the Wabash Railroad. He is with one of five field parties." Ken said that he would enclose a letter from Jack but neglected to do that also, which naturally forces us to assume that an extremely weighty problem must have been troubling him when he wrote. Perhaps we'll get Luby's letter by next month. Finally Ken adds that he saw Joe Guertin plumbing steel columns on a building in Boston. Another source rumors that Joe practiced for several days walking six-inch beams on the ground, before doing the same stunt several stories in the air.

I received an interesting letter from Cook a couple of weeks ago. Bob fears that quoting his letters in these Notes makes it seem as though he were the chief engineer. As a matter of fact his letters are extremely modest as regards his accomplishments. However we shall do as he requests and rewrite his news in our own words. Bob's contract in Venezuela ended in January, but when his job was changed so that he is now in the City of Maracaibo, rather than in a field camp, he decided to stay on until next summer. Thoughts of the rigors of a New England winter after a tropical climate also aided in the decision to stay. Bob's work in the office has been mostly concrete design; the first jobs were concrete piers, platforms, and even swimming pools, indicating that all is not work in Venezuela. In fact, play seems a rather considerable item. Sailing and tennis are Bob's chief diversions — if we can accept as the whole truth the brief statement — "I have had a few contacts with some nice girls and have enjoyed learning the language from them."

Jim Morse has quit the Texaco people and is now working for the New York Central in the Terminal Improvement Division. He started this job at the same time Earl Crawford started in another division which is working on a new track from New York to Poughkeepsie. Earl

1928 Continued

tells me that he often eats breakfast with Jim — when they are both equally late for work. — GEORGE P. PALO, *Secretary*, 143 East 39th Street, New York, N. Y.

1929

Though it will be more than a month after Christmas when you read these notes I am not going to let that prevent my wishing all of you a very merry Christmas and a happy New Year. Better late than never.

I'm sure that all of us join the T.C.A. in wishing Hugh Hamilton much happiness and prosperity, for he has "went and done it." The time was late in November and they are now living in Salem, Mass. The following Course Notes will give notice of other similar events. Maybe they actually do believe that two can live as cheaply as one. Such gamblers!

Only a couple of weeks ago the Registrar sent me a list of '29 men whose whereabouts were unknown and it was quite large. The object was to locate each one so that he could be listed in the "Register of Former Students" which is published in April. If you have not turned in your name, occupation, and so on, for filing, do so at once. It costs nothing and you owe it to the Institute to let them enjoy your success. Let's have some news. — EARL W. GLEN, *General Secretary*, 339 Hillwood Drive, Akron, Ohio.

COURSE I

According to a letter from Larry Newman, Ted Alexieff and Alf Kittredge are to be congratulated on their initiation into the exalted order of married men. It is also reported that they are back at the Institute working as instructors in Course II. Besides giving the above information, Larry says that he has finished his training course with the Telephone

Company and has been assigned to the construction department, where he is to work on toll lines.

Ham Williams crashed through with some interesting news. He says, "I went to Germany in June with Hunter Rouse and we sure had a great trip seeing the sights. His letters of introduction got us into all kinds of places I would never have seen otherwise. In the latter part of July I left him in Munich drinking beer which sure is wonderful stuff. There is nothing like it outside of Bavaria. I spent a couple of weeks in England and got back about the middle of August. I started to work for the United Engineers in Philadelphia, where Dan O'Connell is working. I got a raise while I was there, but at the end of a couple of months I located a better job in New York with the Electric Bond and Share Company." Ham also reports that De Fabritis is instructing in Course II. What is it, that is luring so many of the boys back to the Institute? Maybe it is more and better looking co-eds.

Fred Ricks and Hap Adkins have been transferred from the district engineer's office at Louisville to the new division engineer's office in St. Louis. They are working on the plans for a proposed system of locks and dams on the upper Mississippi River. — GORDON R. WILLIAMS, *Secretary*, 405 West Oak Street, Louisville, Ky.

COURSE XV

I have just received a letter from Ray Underwood, who, you remember, is assisting in EC-70 Department, which gives me considerable dirt for The Review. Johnny Wilson and Chuck Worthen are back at the Institute this year for post-graduate work. Wilson is struggling for a Masters in Course XV while Worthen is getting a Masters in aeroplane design.

Henry Woolman and King Cooper, the two round-the-world troopers are still traveling so far as we know. Both have been heard from in China.

Jim Magenis and Beans Nivling, the two aviators of the Class, are with the Navy at Pensacola, Fla., for training. From latest reports they are getting a good many kicks from it and some bumps. Dick Piez and Bob Arrill are the future presidents of the Dewey and Almy Chemical Company in Somerville. Ray goes off at a tangent at this point to tell me that Chuck Nord is married. Lee McCanne and Jack Osborne are just about to follow suit.

The Class seems to have done things in pairs for next we have Bill Thomas and Fish Hills visiting the Institute together a week ago. Bill is with some engineering corporation in New York City, just who, Ray doesn't say. Fish is in the Stanley works at New Britain, Conn., and likes it very much. Brig Allen is trying to turn his success in Triple E into dollars and cents with the Reliance Electric and Engineering Company of Cleveland, Ohio. Ted Ewald is also in Cleveland with the Commonwealth Securities Company.

Herford Blake and Earl Erickson recently completed a training course in Claremont, N. H., with the Sullivan Machinery Company. They are now, however, on their way to this company's Chicago office. Charlie Denny is with the Westinghouse Company in Pittsburgh competing, evidently, with Brig Allen. Larry Luey is with the Lee Higginson and Company of New York City. John Foster is assisting Professor Porter in accounting.

This ought to help swell the Class Notes for '29. — ELMER SKONBERG, *Secretary*, Electric Motor Repair Company, 11-31 Park Street, Springfield, Mass.

Technology Club of St. Louis

ON December 10 the Club entertained as the guest of honor, Dr. James L. Tryon, at a well attended luncheon at the Missouri Athletic Association. Those who had not known the present Chairman of the Committee on Admissions were unanimous in expressing their whole-hearted approval of the Institute's choice of a representative for so important a mission.

While in St. Louis Dr. Tryon was warmly received at the various private and public schools of the city, and demonstrated his ability to interest prospective students of varying ages in discussing the different phases of an engineering education. In addition to a brief summary of the courses offered at Technology he covered the physical plan of student life, including extra-curriculum activities, and laid emphasis on the necessity of planning entrance to the Institute at least two years in advance. It was noted with appreciation that the cultural side of Technology was touched upon as

well as sound reasons for students being thoroughly grounded in English and the modern languages.

By request, Dr. Tryon presented at the luncheon a *résumé* of his trip, particularly through the Civil War South, which was enriched by intimate personal experiences and observations on the traditions encountered. In Dr. Tryon's own words the advertising slogan behind the purpose of his trip was to "make the best better." Among the most interesting points brought out was the mutual desirability of transfer students from colleges especially in the South and Southwest where they first would have the opportunity to make local acquaintances which would be of benefit in later work; also a personal glimpse of the three Edison students was enjoyed by everyone.

The activities planned for the Club as a whole during the coming year include a winter tournament of various indoor sports, an annual dinner at which it is hoped to have an unusually interesting feature, and the inevitable spring picnic. — SAMUEL F. GORDON '23, *Secretary*, 1019 South Third Street, St. Louis, Mo.

Technology Club of Hawaii

The annual meeting of the Club was held Saturday, December 14, at 12:30 P.M. at the University Club. The purpose of this meeting was to elect officers for the coming year to be our President, Vice-President, Secretary-Treasurer and two directors.

At the luncheon preceding this meeting we had as our guest a very distinguished Alumnus, George W. Fuller '90, who is a hydraulic and sanitary engineer of the firm of Fuller and McClintock, and Vice-President of the A. S. C. E. Mr. Fuller was passing through Honolulu on his way home from the World Engineering Congress in Japan. Harry Baldwin '94, returned on the *Malolo*, on December 14 and was with us. — HARRY P. FIELD '21, *Secretary*, P. O. Box 2750, Honolulu, T. H.

Technology Club of Florida

The only item of interest for these notes this month concerns Dr. Burdett L. Arms who was a member of the Biology Department at the Institute from

1911 to 1913. He has left the State Health Board and taken a position with the Idaho Public Health Department. — MISS HENRIETTA C. DOZIER '99, *Secretary*, 321 Barnett Building, Jacksonville, Fla.

The Technology Club of Cincinnati

Following the November evening meeting of the Club, there has been a renewed interest in the Tuesday luncheons held every week at the Hotel Havlin. New voices have been added to the entropy symposium conducted by Dr. Albert P. Mathews '92; Henry D. Loring '07, is now no longer alone in setting forth the layman's views. Dr. Mathews is one of the bright ornaments of the Club who has this year completed twenty-five years as a full professor in physiological chemistry. On November 27 the Cincinnati *Enquirer*, carried the announcement that "the medical world paid tribute to one of its pioneers in the field of biochemistry at a testimonial dinner in honor of Dr. Albert Prescott Mathews of the Medical College, University of Cincinnati, in the Queen City Club."

Frederick W. Garber '03, was recently

elected President of the United City and Regional Planning Committee at the annual meeting at the Chamber of Commerce, and John S. Rafferty '22, was appointed sanitary engineer for Hamilton County. Major Bradley Jones '10, now Professor of Aeronautical Engineering at the University of Cincinnati, is appearing before various societies to talk on aviation, and Morton Carlisle '90, is prominent in all discussion of national parks. On December 7 our city was honored by the presence of Dr. C.-E. A. Winslow '98, who spoke on "Public Health Today and Tomorrow" at the annual meeting of the Public Health Federation at the Hotel Gibson. One of our members, his classmate, Rudolph Tietig '98, rounded up a small group out of the Club to give him a special Technology attendance.

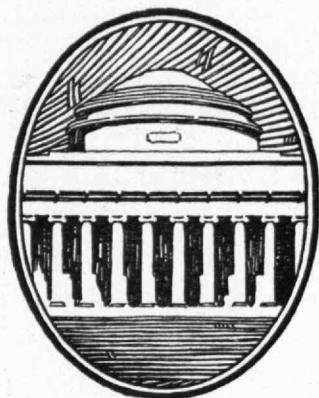
It is significant that the men most prominent in affairs public are most often seen gathered together around the Club luncheon table. There is a round table of good fellowship very much appreciated. — WILLIAM V. SCHMIEDEKE '12, *Secretary*, The Penker Construction Company, 1030 Summer Street, Cincinnati, Ohio.

Niagara Falls Technology Club

The annual fall gathering was held at the Niagara Club on Monday evening, November 18, with a full attendance. After a brief period of socializing, dinner was partaken of. While it was being served a night letter was despatched to Professor R. S. Williams, the contents of which was dictated by the entire crowd. It was a message of thanks and contained the Club's endorsement for the coming year. After dinner a short business meeting was held. The following resolution was made by Norm Duffett '11 and given unanimous approval: "That the Technology Club of Niagara Falls, N. Y., has suffered great loss in the decease of Jacob Strader, Jr. '96, who died December 22, 1928; Edson T. Pollard '02, who died June 24, 1929; and Francis A. J. Fitzgerald '95, who died October 28, 1929."

New officers elected for the year are Norman Duffett '11, President, and Osborne H. Davol '25, Secretary-Treasurer. The elections were unanimous. — JOHN H. ROUNTREE, JR. '25, *Secretary*, 653 Orchard Parkway, Niagara Falls, N. Y.





INFORMATION

THE TECHNOLOGY REVIEW BUREAU exists to supply authoritative information to anyone interested in details regarding the Massachusetts Institute of Technology. It serves as a clearing house for inquiry and aims to further the spread of exact information regarding entrance requirements, outline of courses, subjects of instruction and other information which may be of aid to the students considering undergraduate or graduate study at the Institute.

The Institute publishes a variety of bulletins, fully descriptive of individual courses, as well as a catalogue of general information essential to the entering student. The Technology Review Bureau will be glad to send, gratis and post free upon request, one or more copies of any publication listed below, or to forward any special inquiry to the proper authority.

Ask for the following circulars by their descriptive letters:

AB: For general information, admission requirements, subjects of instruction, ask for Bulletin AB.

C: For announcement of courses offered in Summer Session, ask for Bulletin C.

D: For information on Advanced Study and Research Work, ask for Bulletin D.

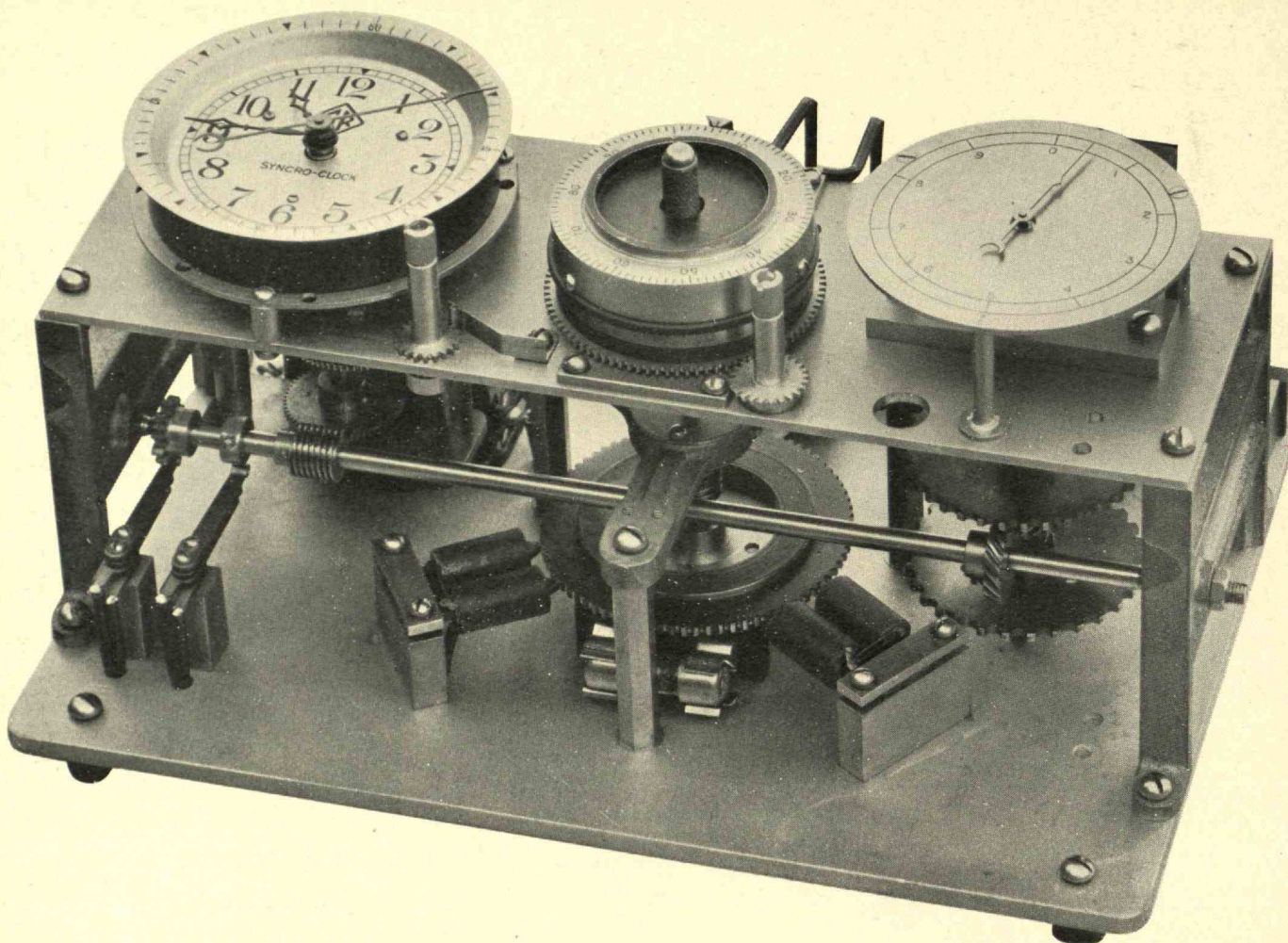
E: For the reports of the President and of the Treasurer, ask for Bulletin E.

Y: For a popularly written explanation of Engineering Courses, ask for Bulletin Y.

All inquiries sent to the address below will receive prompt attention

THE TECHNOLOGY REVIEW BUREAU

ROOM 11-203, MASSACHUSETTS INSTITUTE OF TECHNOLOGY
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SYNCHRONOUS-MOTOR-DRIVEN CLOCKS

THE General Radio syncro-clock shown in the photograph is useful for the laboratory determination of frequency and time intervals with high precision. It consists of a clock train driven synchronously by an alternating-current supply, the clock keeping true time when the supply frequency is 1000 cycles per second. An attachment makes it possible to compare time as kept by the syncro-clock with a standard time interval (such as determined by radio time signals) to well within one one-hundredth of a second.

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